HANDBOOK FOR ARIZONA COMMUNITIES
On Floodplain Management and the National Flood Insurance Program

APPENDIX L

FEDERAL EMERGENCY MANAGEMENT AGENCY

MITIGATION DIRECTORATE

TECHNICAL SERVICES DIVISION

REVISIONS TO

NATIONAL FLOOD INSURANCE PROGRAM MAPS

Application/Certification Forms and Instructions

For

Conditional Letters of Map Revision,

Letters of Map Revision, and

Physical Map Revisions

Commonly Used Acronyms

FEMA	Federal Emergency Management Agency.
NFIP	National Flood Insurance Program.
BFE	Base (1% annual chance) Flood Elevation. It is the height of the base flood, usually in feet, in relation to the datum used, or the depth of the base flood usually in feet, above the ground surface. The base flood is the flood that has a 1% probability of being equaled or exceeded in any given year (also referred to as the 100-year flood or the 1% annual chance flood).
FIS	Flood Insurance Study. An engineering study performed under contract to FEMA to identify flood-prone areas and to determine BFEs, flood insurance rate zones, and other flood risk data for a community.
FIRM	Flood Insurance Rate Map. An official map of a community, on which the Administrator has delineated both the special hazard areas and the risk premium zones applicable to the community.
FBFM	The Flood Boundary and Floodway Map. The floodplain management map issued by FEMA that depicts, on the basis of detailed analyses, the boundaries of the 100- and 500-year floodplain and the regulatory 100-year floodway.
SFHA	Special Flood Hazard Area. Areas inundated by a flood having a 1% probability of being equaled or exceeded in any given year (also referred to as the 100-year flood).
FHBM	The Flood Hazard Boundary Map. The initial flood insurance map issued by FEMA that identified on the basis of approximate analyses, the areas of 100-year flood hazard in a community.
CHHA	Coastal High Hazard Area. An area of special flood hazard extending from offshore to the inland limit of a primary frontal dune along an open coast and any other area subject to high velocity wave action from storms or seismic sources.

INSTRUCTIONS FOR COMPLETING THE APPLICATION/CERTIFICATION FORMS FOR CONDITIONAL LETTERS OF MAP REVISION, LETTERS OF MAP REVISION, AND PHYSICAL MAP REVISIONS

GENERAL

In 1968, the U.S. Congress passed the National Flood Insurance Act, which created the National Flood Insurance Program (NFIP). The NFIP was designed to reduce future flood losses through local floodplain management and to provide protection for property owners against potential losses through flood insurance.

As part of the agreement for making flood insurance available in a community, the NFIP requires the participating community to adopt floodplain management ordinances containing certain minimum requirements intended to reduce future flood losses. The community is also responsible for submitting data to the Federal Emergency Management Agency (FEMA) reflecting revised flood hazard information so that NFIP maps can be revised as appropriate. This will allow risk premium rates and floodplain management requirements to be based on current data.

Submissions to FEMA for revisions to effective Flood Insurance Studies (FISs) by individual and community requesters will require the signing of application/certification forms. These forms will provide FEMA with assurance that all pertinent data relating to the revision is included in the submittal. They will also assure that: (a) the data and methodology are based on current conditions; (b) qualified professionals have assembled data and performed all necessary computations; and (c) all individuals and organizations impacted by proposed changes are aware of the changes and will have an opportunity to comment on them. The circumstances for which this package is applicable are as follows:

Conditional Letter of Map Revision (CLOMR)	A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision (LOMR or Physical Map Revision (PMR)), or proposed hydrology changes (see 44 Code of Federal Regulations (CFR) Ch. 1, Parts 60, 65, and 72).
Letter of Map Revision (LOMR)	A letter from FEMA officially revising the current NFIP map to show changes to floodplains, floodways, or flood elevations (see 44 CFR Ch. 1, Parts 60, 65, and 72).
Physical Map Revision (PMR)	A reprinted NFIP map incorporating changes to floodplains, floodways, or flood elevations. Because of the time and cost involved to change, reprint, and redistribute an NFIP map, a PMR is usually processed when a revision reflects large scope changes (see 44 CFR Ch. 1, Parts 60, 65, and 72).

It should be noted that FEMA may decide to defer a revision until a future date. Please note that for the following circumstances, this package is not applicable. Instead, the package entitled Amendments and Revisions to National Flood Insurance Program Maps, Application/Certification Forms and Instructions for Conditional Letters of Map Amendment, Letters of Map Amendment, Conditional Letters of Map Revision (Based on Fill), and Letters of Map Revision (Based on Fill) is appropriate.

Letter of Map Amendment (LOMA)	A letter from FEMA removing an existing structure or a legally defined parcel of land unaltered by fill from an SFHA (see 44 CFR Ch. 1, Part 70).
Conditional Letter of Map Amendment (CLOMA)	A letter from FEMA conditionally removing a proposed structure or a legally defined parcel of land unaltered by fill from an SFHA (see 44 CFR Ch. 1, Parts 70 and 72).
Letter of Map Revision Based on Fill (LOMR-F)	A letter from FEMA removing an existing structure or a or a legally defined parcel of land elevated by the placement of fill from an SFHA (see 44 CFR Ch. 1, Section 65.5 and Part 72).
Conditional Letter of Map Revision Based on Fill (CLOMR-F)	A letter from FEMA conditionally removing a proposed structure or a legally defined parcel of land to be elevated by the placement of fill from an SFHA (see 44 CFR Ch. 1, Section 65.5 and Part 72).

NFIP regulation, CFR Ch. 1, specifies the requirements regarding the submittal of revision requests to FEMA. A document entitled Appeals, Revisions, and Amendments to Flood Insurance Maps, A Guide for Community Officials, (FIA-12), provides background on the NFIP and an expanded explanation of these requirements.

NFIP Regulation, 44 CFR Ch. 1, Part 59, contain general provisions of the NFIP with which all requesters and community officials involved in revision requests should be familiar.

NFIP Regulation, 44 CFR Ch. 1, Section 65.2, contain definitions relative to certification of data, analyses, and structural works. This information is important to all professionals certifying technical information submitted with revision requests and should be carefully reviewed prior to signing the application/certification forms.

Part 72 of the NFIP regulations, published at 44 CFR 72, presents information regarding the reimbursement procedure that FEMA has initiated to allow for the recovery of costs associated with the review of requests for CLOMRs, LOMRs, or PMRs. The fees for FEMA's review and processing of CLOMR, LOMR, and PMR requests are as follows:

	CLOMR	LOMR	PMR
· Detailed data	--	$3,100	$3,100
· Channel modification, new bridge or culvert, or combination	$3,100	$4,000	$4,000
· Levees, berms, or other structural modifications	$4,000	$4,700	$4,700
· Structural measures on alluvial fan	$5,000	$5,000	$5,000
· Review of revised hydrology	$3,100	--	--
· "As-Built" request follow-up to CLOMR	--	$3,400	$3,400

For requests involving a combination of the above, the highest fee will apply. For requests involving structural measures on alluvial fans, the $5,000 fee is the initial fee required. If FEMA's review and processing fees exceed $5,000, FEMA will recover the additional fees by invoicing the requester before issuing a determination letter.

Payment must be made in the form of a check or money order made payable in U.S. funds to the National Flood Insurance Program. Please forward payment to the following address:

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Exempt from these reimbursement procedures for either proposed or "as-built" conditions are requests for: (1) map change requests based on federally sponsored flood-control projects where 50 percent or more of the project's costs are federally funded; (2) map change requests based on detailed hydrologic and hydraulic studies conducted by Federal, State, or local agencies to replace approximated studies conducted by FEMA and shown on the effective FIRM; and (3) requests to correct NFIP map errors. Please note, the fee amounts and structure are reviewed by FEMA on a yearly basis. Based on this review the fee amounts and structure may be modified. To obtain current fee amounts contact the appropriate FEMA Regional Office indicated at the end of the instructions.

A request for a revision to the effective FIS information (FIRM, FBFM, and/or FIS report) is usually a request that FEMA replace the effective floodplain boundaries, flood profiles, floodway boundaries, etc., with those determined by the requester. Before FEMA will replace the effective FIS information with the revised, the requester must: (a) provide all of the data used in determining the revised floodplain boundaries, flood profiles, floodway boundaries, etc.; (b) provide all data necessary to demonstrate that the physical modifications to the floodplain have been adequately designed to withstand the impacts of the 1% annual chance flood event and will be adequately maintained; (c) demonstrate that the revised information (e.g., hydrologic and hydraulic analyses and the resulting floodplain and floodway boundaries) are consistent with the effective FIS information.

Completed application/certification forms should be neatly packaged in order, with the appropriate enclosure following each form submitted. A notebook-style format is ideal. The completed package should be submitted to the appropriate address listed at the end of the instructions. The telephone numbers of the ten Regional Offices, as well as information regarding which areas they support, are provided at the end of the instructions. The address and telephone number of the Headquarters office in Washington, D.C., are also provided.

If the request is a follow-up to a CLOMR for a project built as proposed, only the Revision Requester and Community Official Form and the Professional Certification Form need to be completed.

Additional information is contained on the forms. Wherever necessary, attach additional sheets required to provide the information requested on the forms.

INSTRUCTIONS FOR COMPLETING THE REVISION REQUESTER AND COMMUNITY OFFICIAL FORM (FORM 1)

This form provides the basic information regarding revision requests and must be submitted with each request. It contains much of the material needed for FEMA to assess the nature and complexity of the proposed revision. It will identify: (a) the type of response expected from FEMA; (b) those elements that will require supporting data and analyses; and (c) items needing concurrence of others. This form will also assure that the community is aware of the impacts of the request and has notified impacted property owners, if required. All items must be completed accurately. If the revision request is being submitted by an individual, firm, or other non-community official, contact should be made with appropriate community officials. NFIP regulation 44 CFR Ch. 1, Section 65.4, requires that revisions based on new technical data be submitted by the Chief Executive Officer (CEO) of the community or a designated official. Should the CEO refuse to submit such a request on behalf of another party, FEMA will agree to review it only if written evidence is provided indicating the CEO or designee has been requested to do so.

Requested Response from FEMA

1. Indicate the type of response being requested. Brief descriptions of possible responses are provided in the introduction; more detail regarding these responses and the data required to obtain each response are provided in the NFIP regulations, 44 CFR Ch. 1, and in the document entitled Appeals, Revisions and Amendments to Flood Insurance Maps: A Guide for Community Officials, (FIA 12).

Overview

1. Physical changes include watershed development, flood control structures, etc. Note that fees will be assessed for FEMA's review of proposed and "as-built" projects, as outlined in NFIP regulations 44 CFR Ch. 1, Part 72. Improved methodology may be a different technique (model) or adjustments to models used in the effective FIS. Improved data include revised as well as new data. Floodway revisions involve any shift in the FEMA-designated floodway boundaries, regardless of whether the shift is mappable.

2. Flooding source refers to a specific lake, stream, ocean, etc. This should match the flooding source name shown on the FIRM, if it has been labeled. (Examples: Lake Michigan, Duck Pond, or Big Hollow Creek).

3. Project Name/Identifier can be the name of a flood control project or other pertinent structure having an impact on the effective FIS, the name of a subdivision or area, or some other identifying phrase.

4. The Zone designation(s) affected can be obtained from the FIRM.

5. The map number, panel number, community number, and effective date can be obtained from the FIRM title block. The sample FIRM panels (Figures 1 and 2) provide a convenient source of information to fill in item 5.

6. Indicate the type(s) of flooding and structure(s) associated with the revision request.

Encroachment Information

1. If the revision request involves changes to a designated floodway and the floodway is regulated by a State agency, approval by the appropriate State agency must be obtained.

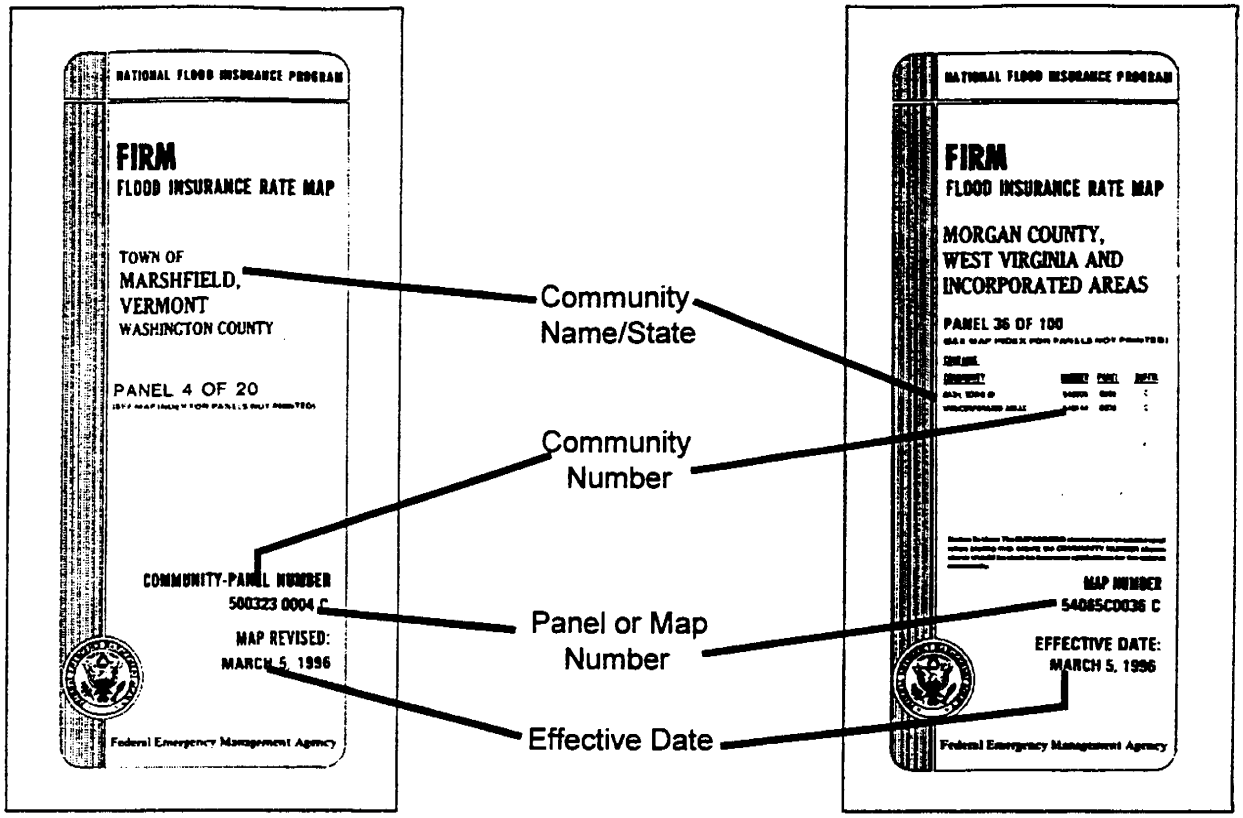


Figure 1. Sample FIRM Panel (Single Community)

Figure 2. Sample FIRM Panel (Countywide)

2. This question applies to projects built in the floodway only. Indicate if the project built in the floodway causes any increase in the 1% annual chance flood elevation. If the project causes increases, all requirements of Section 65.12 of the NFIP regulations must be met.

3. This question applies to projects built in the floodway fringe, or the floodplain for streams where a floodway has not been established. If the project causes increases in the 1% annual chance flood elevation greater than one foot (or any other more stringent requirement set by the community), all requirements of Section 65.12 of the NFIP regulations must be met.

Maintenance Responsibility

For revisions involving flood a control structure, indicate if the community will be responsible for maintaining the structure. Attach a maintenance and operations plan.

Review Fee

Enter the fee amount associated with the request as indicated in the fee schedule provided in the introduction. Or, indicate that the revision meets the requirements for a fee exemption.

Signature

Signature and Title of Revision Requester

The person signing this certification should own the property involved in the request or have legal authority to represent a group/firm/organization or other entity in legal actions pertaining to the NFIP.

Signature and Title of Community Officials

The person signing this certification should be the CEO for the community involved in this revision request or an official legally designated by the CEO. If more than one community is affected by the change, the community official from the community that is most affected should sign the form and letters from the other affected communities should be enclosed. If the community or communities disagree with the proposed revision, a signed statement should be attached to the request explaining the reasons or bases for disagreement. The community should refer to the document entitled Appeals, Revisions, and Amendments to Flood Insurance Maps: A Guide for Community Officials, (FIA-12).

Certification by Registered Professional Engineer and/or Land Surveyor

The licensed professional engineer and/or land surveyor should have a current license in the State in which one of the impacted communities resides. While the individual signing this form is not required to have obtained the supporting data or performed the analyses, he or she must have supervised and reviewed the work.

A certification by a registered professional engineer or other party does not constitute a warranty or guarantee of performance, expressed or implied. Certification of data is a statement that the data is accurate to the best of the certifier's knowledge. Certification of analyses is a statement that the analyses have been performed correctly and in accordance with sound engineering practices. Certification of structural works is a statement that the works are designed in accordance with sound engineering practices to provide protection from the 1% annual chance flood. Certification of "as-built" conditions is a statement that the structure(s) has been built according to the plans being certified, is in place, and is fully functioning.

If the requester is a Federal agency who is responsible for the design and construction of flood control facilities, a letter stating that "the analyses submitted has been performed correctly and in accordance with sound engineering practices" may be submitted in lieu of this form. Regarding the certification of completion of flood control facilities, a letter from the Federal agency certifying its completion and the flood frequency event to which the project protects may be submitted in lieu of this form.

INSTRUCTIONS FOR COMPLETING THE CREDIT CARD INFORMATION FORM (FORM 2)

If the revision request involves a fee, the option of paying with a credit card is available. Accepted credit cards include Visa, and Mastercard. Please include the case number if known and clearly print all information.

INSTRUCTIONS FOR COMPLETING THE HYDROLOGIC ANALYSIS FORM (FORM 3)

This form is to be completed when discharges other than those used in the FIS are proposed. Information requested is used to compare revised data to FIS data, compare revised discharges to FIS discharges, and to determine the merit of using revised methods and data over those used in the FIS. This form must filled out for each flooding source studied.

Reason for New Hydrologic Analysis

For revisions based on alternative methodologies or improved data, an explanation as to why the alternative methodology or improved data provides better results over the FIS must be presented and supported throughout the form. Models submitted in support of a revision request must meet the requirements of Subparagraph 65.6(a)(6) of the NFIP regulations.

Methodology for New Analysis

Specify the method used for the new analysis. For each method specified, fill out the supporting attachment in Form 3. Attach any additional backup computations and supporting data such as a soils map, soil group names, time of concentration computations, curve numbers, etc.

Approval of Analysis

If approval of the new hydrologic analysis is required by a local, State, or Federal agency, indicate if the analysis, including the resulting peak discharge value(s), has been approved by the appropriate local, State, or Federal agency and attach evidence of the approval.

Comparison of Base Flood Discharges

This section is to compare the effective discharges to the revised discharges. Attach a separate sheet comparing the base flood discharges for each flooding source.

In accordance with NFIP regulations, if only a portion of a detailed study stream is revised, transition to the unrevised portion must be assured to maintain the continuity of the study. Attach an explanation of how the transition from the proposed discharge to the effective discharge was made.

Historical Flooding Information

This data can include high water marks for previous flooding events.

Attachment A: Statistical Analysis of Gage Records

Statistical analyses of gage data are based on the guidelines set out in Bulletin 17B by the Interagency Advisory Committee on Water Data.

Systematic data refer to peak discharge data observed and recorded regularly over a period of time by a government agency or private firm. Historical data refers to peak discharge data observed outside the systematic period and recording only isolated outstanding events. Historical data should be documented whenever possible.

For data to be homogeneous, the long-term trend of the data should remain constant. In other words, the probability distribution used to describe it is independent of time. An example of non-homogeneous data would be peak discharge data at the confluence of two streams following two different flow regimes.

Adjustments made to the statistical data/record, such as the use of a second gauging station to compensate for a short record or adjustments for zero flood years.

Bulletin 17B recommends the use of the log-Pearson Type III (LP3) distribution for the statistical analysis of flood data. However, there may be situations where the LP3 distribution is inappropriate and another probability distribution must be used. Other distributions include Extreme Value (Gumbel) and log-normal (Galton). The use of alternative distributions must be justified and fully documented.

Comparison with other analyses includes comparing the analysis with another station on a hydrologically similar stream or using an alternative analysis (e.g., regression equations) to verify the reasonableness and logic of the results.

Attachment B: Confidence Limits Evaluation

When revised discharges are not significantly different than the FIS discharges, FEMA may require a confidence limit analysis at a later date to complete the review.

Attachment C: Regression Analysis (one per stream)

The source of the regression equations must be given along with a proper bibliographical reference. The U.S. Geological Survey (USGS), in cooperation with State agencies in charge of monitoring water data, has developed regression equations on a state-by-state basis. As these are revised regularly, FEMA will accept only the most recently published regression equation report. Other agencies also put out regression analyses reports, or a regional analyses can be performed.

Stream stations are grouped in hydrologic regions in which certain basin parameters have been found to have roughly the same influence on the peak flows as evidenced by the multiple regression analysis. It can happen that a stream watershed may encompass more than one region, in which case some proportionality of the influence of each region upon the peak discharge must be considered.

Most regression equations are developed for rural or undeveloped conditions. These results can be modified to reflect urban or developed conditions. If urbanized conditions were considered, the methodology for developing the urban discharges must be described and/or referenced and the percentage of the watershed that is urbanized must be given.

Because regression equations are based on compilation of data from several gage stations, a certain amount of natural basin storage is inherent in the equations. However, regression equations are not designed to handle watersheds controlled by major storage features such as flood control structures. If such structures exist, a full account of how flood storage was considered must be given.

Attachment D: Precipitation/Runoff Model (One Per Model)

Baseflow is defined as the estimated flow occurring in the stream before the flood event occurs.

Because there are many different precipitation/runoff models, many with a different theoretical basis, it is very difficult, if not impossible, to prove that one model provides superior results over another. Therefore, it must be shown that the types of parameters, the theoretical basis, and source of data provide superior results.

If possible, a precipitation runoff model should be compared and calibrated to a known flood event in order to justify the values of the parameters and the assumptions made in the model. All calibration and verification runs should be described and the results discussed. Please attach hard copies of the calibration and verification model outputs.

INSTRUCTIONS FOR COMPLETING THE RIVERINE HYDRAULIC ANALYSIS FORM (FORM 4)

This form is to be completed when the request involves a hydraulic analysis for riverine flooding that differs from that used to develop the FIRM.

Reach to be Revised

The reach to be revised, or the area of revision, is defined by an effective tie-in at the upstream and downstream limits. For streams which have a detailed study, an effective tie-in is obtained by tieing in to the natural and floodway water-surface elevation within 0.10 feet, and to the effective encroachment stations and floodway topwidths at both the upstream and downstream limits. For streams that do not have a detailed study, a tie-in is obtained by tying in to the natural water-surface elevation of the pre-project conditions model at both the upstream and downstream limits. Please note that the area of revision and the project area are not necessarily the same. In fact they are almost always different.

Models Submitted

Duplicate effective model

The effective multiple discharge (10-, 50-, 100-, and 500-year) and the floodway (100-year natural and encroached runs) models are required to be submitted to establish base-line models.

To obtain copies of the effective FIS models, either the community or a FEMA Regional Office should be contacted for direction. A list of FEMA Regional Offices is located at the end of the instructions. If the effective models are not available, the requester must generate models that duplicate the FIS profiles and the elevations shown in the Floodway Data Table in the FIS report to within 0.1 foot or contact FEMA Headquarters for guidance. FEMA Headquarters should be contacted if this model cannot be produced. If an alternative hydraulic model is used, it must be shown that the use of the original model is inappropriate and the new model must be calibrated to reproduce the FIS profiles within 0.1 foot.

Corrected effective model

The corrected effective model may be submitted to provide a more detailed analysis than the duplicate effective model at the project site or fix any technical deficiencies.

Existing or pre-project conditions model

The existing or pre-project model may be required to support conclusions about the actual impacts of the project associated with the revised or post-project model or to establish more up-to-date models on which to base the revised or post-project conditions model.

Revised or post-project conditions model

The revised or post-project conditions model is required to be submitted. This model must always include the existing and post-project conditions.

Additional information about these models is contained on the form.

When the request is for a proposed project, the revised or post-project model should reflect proposed conditions. The information requested on the Hydraulic Analysis Form is intended to document the steps taken by the requester in the process of preparing the revised or post-project conditions hydraulic model and the resulting revised FIS information. The following guidelines should be followed when completing the form:

(a) All changes to the duplicate and subsequent models must be supported by certified topographic information, bridge plans, construction plans, survey notes, etc.

(b) Changes to the hydraulic models should be limited to the stream reach for which the revision is being requested. Cross sections upstream and downstream of the revised reach should be identical to those in the effective model. If this is done, water surface elevations and topwidths computed by the revised models should match those in the effective models upstream and downstream of the revised reach as required.

(c) There must be consistency between the revised hydraulic models, the revised floodplain and floodway delineation's, the revised flood profiles, topographic work map, annotated FIRMs and/or FBFMs, construction plans, bridge plans, etc.

For SFHAs designated as Zone A, the existing or pre-project model and the revised or post-project model, or other hydraulic analyses for existing and revised conditions are required to determine the 100-year flood profile. The existing model or analysis is required to support conclusions about the actual impacts of the project associated with the revised or post-project model or analysis.

Starting Water-Surface Elevations

For a detailed studied stream, the effective known water-surface elevation should be used as a starting condition. The slope-area method is recommended for streams that do not have a detailed study.

Results (from the model used to revise the 100-year water-surface elevation)

Check all selections that apply and attach an explanation for each.

FEMA developed the CHECK-2 computer program to facilitate the review of hydraulic analyses done using the U.S. Army Corps of Engineers (USACE) HEC-2 program. A copy of CHECK-2 can be obtained by contacting FEMA Headquarters at the address listed at the end of the instructions.

Revised FIRM/FBFM and Flood Profiles

1. Indicate the tie-in locations to the effective study. See above discussion for obtaining an effective tie-in.

2. Attach profiles, at the same vertical and horizontal scales as the profiles in the effective FIS report, showing stream bed and profiles of all floods studied (without encroachment). Also, label all cross sections, road crossings (including low chord and top-of-road data), culverts, tributaries, and study limits. If channel distance has changed, the stationing should be revised for all profile sheets.

3. Attach a Floodway Data Table showing data for each cross section listed in the published Floodway Data Table in the FIS report.

INSTRUCTIONS FOR COMPLETING THE RIVERINE/COASTAL MAPPING FORM (FORM 5)

This form is to be completed when mapping changes to either the FIRM or FBFM are proposed and to assure that the revised floodplain and floodway boundary information tie-in to the effective information so that a consistent NFIP map is maintained. In addition, the questions asked and information required are to determine the impacts of the revision, including increases in SFHA and shifts in floodway both on and off the requester's property.

Mapping Changes

1. A certified topographic workmap of suitable scale, contour interval, and planimetric definition must be submitted showing all the items that apply. For those items marked NO or N/A, attach an explanation as to why they were not included or why they do not apply.

2. Indicate the source and date of the updated topographic information.

3. Indicate the scale and contour interval of the effective FIS workmap and the submitted topographic workmap. The effective workmap contour interval and scale can be obtained from the FIS report. Note that the revised topographic information must be of equal or greater detail than that the effective.

4. Attach an annotated FIRM panel showing the revised 1% and 0.2% annual chance floodplains and floodway boundaries. The revised boundaries must tie into the effective boundaries.

Earth Fill Placement

When fill is placed in the 1% annual chance floodplain and the request is to alter the 100-year flood boundary in order to permanently remove the filled area from the floodplain, the fill must be compacted and protected against erosion from moving flood waters.

An insurable structure is defined as a walled and roofed building, other than a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a manufactured home on a permanent foundation. For the latter purpose, the term includes a building while in the course of construction, alteration or repair, but does not include building materials or supplies intended for use in such construction, alteration or repair, unless such materials or supplies are within an enclosed building on the premises.

If structures can conceivably be constructed on the fill at any time in the future, certification of fill compaction must be submitted in accordance with Subparagraph 65.5(a)(6) of the NFIP regulations.

INSTRUCTIONS FOR COMPLETING THE CHANNELIZATION FORM (FORM 6)

This form is to be completed when any portion of the stream channel is altered or relocated. When the Channelization Form is submitted, a Riverine Hydraulic Analysis Form must also be submitted.

The purpose of the Channelization Form is to assure that the channel will function properly as designed and pass the 1% annual chance flood as determined by the hydraulic analysis. Typically, channelization increases the channel velocity above the natural channel velocity. Documentation must be provided that assures that the channel lining will withstand the velocities associated with the 1% annual chance flood. Additional considerations are the stability of the flow regime and the affects of sediment transport.

Reach to be Revised

Indicate the extent of the channelization.

Channel Description

Attach a description of the channel inlet and outlet, cross sectional and planimetric configuration, and the channel bottom and side linings.

Accessory Structures

Indicate all the accessories included with the channelization.

Drawing Checklist

Attach engineering drawings of the channelization certified by a registered professional engineer.

Hydraulic Considerations

Attach any explanations necessary.

Sediment Transport Considerations

Provide any necessary information if there is evidence that sediment transport will affect the 1% annual chance water-surface elevations.

INSTRUCTIONS FOR COMPLETING THE BRIDGE/CULVERT FORM (FORM 7)

This form is to be completed when the request involves a new bridge or culvert or a new or revised analysis of an existing bridge or culvert.

Indentifier

Typically, a revision is not requested to reflect a new analysis of a previously studied existing structure. If this is the case, an explanation of why the new analysis was performed is required. Typically, the structure is analyzed using the same method of analysis used for the flooding source. If a different method is used for the structure, justification why the hydraulic analysis utilized for the flooding source could not analyze the structure must be enclosed.

Drawing Checklist

Attach plans of the structure certified by a registered professional engineer.

Sediment Transport Considerations

Provide any necessary information if there is evidence that sediment transport will affect the 1% annual chance water-surface elevations.

INSTRUCTIONS FOR COMPLETING THE LEVEE/FLOODWALL SYSTEM ANALYSES FORM (FORM 8)

The purpose of this form is to assure that the levee or floodwall is designed and/or constructed to provide protection from the 1% annual chance flood, in full compliance with 44 CFR Ch. 1, Section 65.10 of the NFIP regulations, before reflecting its effects on an NFIP map. A complete engineering analysis must be submitted in support of each section of this form. In addition, a vicinity map along with a complete set of flood profile sheets, plan sheets, and layout detail sheets must be submitted. These sheets must be numbered, and an index must be provided that clearly identifies those sheets specifically relating to the levee or floodwall in question.

Reach to be Revised

Indicate the extent of the levee/floodwall system.

Levee/Floodwall System Elements

Indicate all the levee/floodwall system elements that apply and provide engineering drawings certified by a registered professional engineer.

Freeboard

Riverine levees must provide a minimum freeboard of three feet above the 1% annual chance water-surface elevation. An additional one foot above the minimum is required within 100 feet in either side of structures (such as bridges) riverward of the levee or wherever the flow is constricted. An additional one-half foot above the minimum at the upstream end of the levee, tapering to not less than the minimum at the downstream end of the levee, is also required. If exceptions to the minimum freeboard requirements are requested, attach documentation addressing Subparagraph 65.10(b)(ii) if the NFIP regulations.

Sediment Transport Consideration

Provide any necessary information if there is evidence that sediment transport will affect the 1% annual chance water-surface elevations.

Closures

All openings must be provided with closure devices that are structural parts of the system during operation and design.

Embankment Protection

The embankment protection analysis must demonstrate that no appreciable erosion of the levee embankment can be expected during the 1% annual chance flood, as a result of either current or waves, and that anticipated erosion will not result in failure of the levee embankment or foundation directly or indirectly through reduction of the seepage path and subsequent instability. Factors to addressed include, but are not limited to: expected flow velocities; expected wind and wave action; ice loading; impact of debris; slope protection techniques; duration of flooding at various stages and velocities; embankment and foundation materials; levee alignment; bends; transitions; and levee side slopes.

Attach engineering analysis to support the construction plans. Submit all backup information used in the analysis.

Embankment and Foundation Stability

This analysis must evaluate expected seepage during loading conditions associated with the 1% annual chance flood and shall demonstrate that seepage into or through the levee foundation and embankment will not jeopardize embankment and foundation stability. An alternative analysis described in the USACE manual, "Design and Construction of Levees" (EM 1110-2-1913, Chapter 6, Section II), may be used. The factors that must be addressed in the analysis include: depth of flooding, duration of flooding, embankment geometry and length of seepage path at critical locations, others design factors (such as drainage layers), and others design factors affecting embankment and foundation stability (such as berms). Submit all backup information used in the analysis.

Floodwall and Foundation Stability

See above embankment and foundation stability discussion.

Settlement

The settlement analysis must assess the potential and magnitude of future losses of freeboard and must demonstrate that the minimum freeboard requirements will be maintained. The analysis must address embankment loads, compressibility of embankment soils, compressibility of foundation soils, age of the levee system, and construction compaction methods. In addition, detailed settlement analysis using procedures such as those described in the USACE manual, "Soil Mechanics Design-Settlement Analysis" (EM 1100-2-1904) must be submitted. Submit all backup information used in the analysis.

Interior Drainage

In accordance with Subparagraph 65.10(b)(6) of the NFIP regulations, the interior drainage analysis must be based on the joint probability of interior and exterior flooding and the capacity of facilities for evacuating interior floodwaters. The analysis must identify the extent of the flooded area, and the water-surface elevation(s) of the 1% annual chance flood if the average depth is greater than one foot. This information is to show on a certified topographic workmap. All back-up information must be submitted.

Other Design Criteria

Address any other criteria that may be a problem and attach any supporting documentation.

Operational Plan and Criteria

For a levee system to be recognized by FEMA, the operational criteria must be as described in Subparagraph 65.10(c) of the NFIP regulations.

INSTRUCTIONS FOR COMPLETING THE COASTAL ANALYSIS FORM (FORM 9)

The information requested on the Coastal Analysis Form is intended to document the steps taken by the requester in the process of preparing the revised models or analyses and the resulting revised FIS information. Refer to the Guidelines and Specifications for Wave Height Determination and V Zone Mapping for the wave height analyses and mapping procedures used by FEMA for coastal areas. The following guidelines should be followed when completing the form:

Coastline to be Revised

Describe the limits of the restudied area. Road names and/or landmarks in the vicinity of the restudied area or transects used in the effective FIS may used as reference points.

Effective FIS

The type of analyses (approximate or detailed wave parameter computations) used for the effective FIS for the community being restudied must be provided. This information is available in the hydrologic and hydraulic sections of the FIS report.

Revised Analysis

All changes to effective models must be supported by certified topographic information, structure plans, survey notes, storm surge data, meteorological data, etc. All equations or models used must be referenced. Descriptions and/or sketches of transect profiles should be attached for revised erosion, wave height, wave runup, and wave overtopping analyses. Wave runup and wave overtopping should be considered when the wave heights near the crest of the shore protection structure or natural land forms. If FEMA procedures are not used in the revised analyses, explanations for replacing FEMA's procedures with the revised methodology should be provided.

Results

Information must be provided to determine the impact of the analysis on the mapping of the coastal high hazard areas, including the location of the coastal high hazard area boundaries, maximum wave height elevation, and the maximum wave runup elevation. Mapping resulting from the re-analysis of the effective study must tie-in with areas not re-studied. The mapped inland limit of the coastal high hazard areas (V-zones) as a result of the re-analysis must be in compliance with 44 CFR Ch. 1 Section 65.11 of the NFIP regulations in areas where primary frontal dunes are present.

INSTRUCTIONS FOR COMPLETING THE COASTAL STRUCTURES FORM (FORM 10)

The Coastal Structures Form is to be completed when a revision to coastal flood hazard elevations and/or areas is requested based on coastal structures being credited as providing protection from the base flood. The purpose of the Coastal Structures Form is to assure that the structure is designed and constructed to provide protection from the base flood without failing or causing an increase in flood hazards to adjacent areas. Refer to the Guidelines and Specifications for Wave Height Determination and V Zone Mapping for the criteria for evaluating flood protection structures.

If the coastal structure is a levee/floodwall, complete the Levee/Floodwall System Analysis Form in lieu of this form. When the Coastal Structures Form is submitted, the Coastal Analysis Form should also be submitted.

Background

The type of structure, the location, the material being used, and the age of the structure must be provided. Certified "as built" plans must also be provided. If these plans are not available, an explanation must be given with sketches of the general structure dimensions as described. If the structure design has been certified by a Federal agency to provide flood protection and withstand forces from the 100-year (base) flood, the dates of the project completion and certification of the structure should be provided, and the remainder of the form does not need to be completed.

Design Criteria

Documentation must be provided that assures a coastal structure is designed and constructed to withstand the wind and wave forces associated with the base flood. The minimum freeboard of the structure must be in compliance with 44 CFR Ch.1, Section 65.10. Additional concerns include the impact to areas directly landward of the structure that may be subjected to overtopping and erosion along with possible failure of the structure due to undermining from the backside and the possible increase in erosion at the ends of the structure to unprotected properties. The evaluation of protection provided by sand dunes must follow the criteria outlined in 44 CFR Ch. 1, Section 65.11.

INSTRUCTIONS FOR COMPLETING THE DAM FORM (FORM 11)

The Dam Form is to be filled out when there is an existing, proposed, or modified dam along a stream studied in detail. Any flood control storage to be considered in the hydrologic analysis for the dam should be totally dedicated to flood control. If the dam is not certified to safely pass the 1% annual chance flood and the dam has a reasonable probability of failure during the 1% annual chance flood, a dam break analysis should be submitted. The dam break analysis should provide consistent results, use empirical peak discharges from actual dam failures, require minimal input data, and perform river routing of the failure hydrograph by dynamic procedures, which includes attenuation and translation. The NFIP does not involve appraisal of dam safety adequacy; however, the FISs should include impacts of structures when subjected to 1% annual chance flood hydrographs. Local, State, and/or Federal laws address dam safety features.

INSTRUCTIONS FOR COMPLETING THE ALLUVIAL FAN FLOODING FORM (FORM 12)

The purpose of this form is to assure that a structural flood control measure in areas subject to alluvial fan flooding is designed and/or constructed to provide protection from the 1% annual chance flood, in compliance with 44 CFR Ch. 1, Section 65.13 of the NFIP regulations, before it is recognized on an NFIP map. Please be aware that elevation of a parcel of land or a structure by fill or other means only, will not serve as a basis for removing areas subject to alluvial fan flooding from an area of special flood hazards. See Section 65.13 of the NFIP regulations. Complete engineering analyses must be submitted in support of each section of this form. In addition, it may be necessary to complete other forms relating to specific flood control measures, such as levees/floodwalls, channelization, or dams.

FEMA REGIONAL OFFICES

REGION I

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont)

Federal Emergency Management Agency
Mitigation Division
J. W. McCormack Post Office and Courthouse Building, Room 462
Boston, Massachusetts 02109-4595
(617) 223-9561

REGION II

(New York, Puerto Rico, New Jersey)

Federal Emergency Management Agency
Mitigation Division
26 Federal Plaza, Room 1351
New York, New York 10278-0002
(212) 225-7200

REGION III

(Delaware, D.C., Maryland, Pennsylvania, Virginia, West Virginia)

Federal Emergency Management Agency
Mitigation Division
Liberty Square Building (Second Floor)
105 South Seventh Street
Philadelphia, Pennsylvania 19106-3316
(215) 931-5512

REGION IV

(Alabama, Florida, Georgia, Kentucky, Mississippi, N. Carolina, S. Carolina, Tenn.)

Federal Emergency Management Agency
Mitigation Division
Koger Center - Rutgers Building
3003 Chamblee Tucker Road
Atlanta, Georgia 30341
(770) 220-5400

REGION V

(Illinois, Indiana, Michigan Minnesota, Ohio, Wisconsin)

Federal Emergency Management Agency
Mitigation Division
175 West Jackson Boulevard,
Fourth Floor
Chicago, Illinois 60604-2698
(312) 408-5596

REGION VI

(Arkansas, Louisiana, New Mexico, Oklahoma, Texas)

Federal Emergency Management Agency
Mitigation Division
Federal Regional Center
800 North Loop 288
Denton, Texas 76201-3698
(817) 898-5165

REGION VII

(Iowa, Kansas, Missouri, Nebraska)

Federal Emergency Management Agency
Mitigation Division
2323 Grand Boulevard, Suite 900
Kansas City, Missouri 64108
(816) 283-7002

REGION VIII

(Colorado, Montana, N. Dakota, S. Dakota, Utah, Wyoming)

Federal Emergency Management Agency
Mitigation Division
Denver Federal Center
Building 710, Box 25267
Denver, Colorado 80225-0267
(303) 235-4830

REGION IX

(Arizona, California, Hawaii, Nevada)

FEMA
LOMR Depot
3601 Eisenhower Avenue
Suite 600
Alexandria, Virginia 22304
Attn. LOMR Manager
(415) 923-7175

REGION X

(Alaska, Idaho, Oregon, Washington)

Federal Emergency Management Agency
Mitigation Division
Federal Regional Center
130 228th Street, S.W.
Bothell, Washington, 98021-9796
(206) 487-4600

FEMA HEADQUARTERS OFFICE

Inquiries to FEMA Headquarters should be addressed to the following address:

Federal Emergency Management Agency
Mitigation Directorate
Hazard Identification and Risk Assessment Division
500 C Street, SW
Washington, DC 20472
(202) 646-3680

FEDERAL EMERGENCY MANAGEMENT AGENCY **REVISION REQUESTER AND COMMUNITY OFFICIAL**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.13 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

1. REQUESTED RESPONSE FROM FEMA

This request is for a:

☐ CLOMR A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60,65 & 72).

☐ LOMR A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, floodway or flood elevations. LOMRs typically decrease flood hazards. (See 44 CFR Ch. 1 Parts 60 & 65.)

☐ Other Describe: _____

2. OVERVIEW

1. The basis for this revision request is (are): (check all that apply)

☐ Physical Change ☐ Improved Methodology/Data ☐ Floodway Revision

☐ Other Describe: _____

Note: A photograph is not required, but is very helpful during review.

2. Flooding Source: _____

3. Project Name/Identifier: _____

4. FEMA zone designations affected: _____
(example: A, AH, AO, A1-A30, A99, AE, V, V1-V30, VE, B, C, D, X)

5. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301	Katy, City	TX	480301	0005D	02/08/83
480287	Harris County	TX	48201C	0220G	09/28/90

6. The area of revision encompasses the following types of flooding and structures. Check all that apply.

Types of Flooding	Structures
☐ Riverine	☐ Channelization
☐ Coastal	☐ Levee/Floodwall
☐ Alluvial fan	☐ Bridge/Culvert
☐ Shallow Flooding (e.g. Zones AO and AH)	☐ Dam
☐ Lakes	☐ Fill
☐ Other (describe)	☐ Other (describe)

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. ENCROACHMENT INFORMATION

1. Does the State have jurisdiction over the floodway or its adoption by communities participating in the NFIP? ☐ Yes ☐ No

If Yes, attach a copy of a letter notifying the appropriate State agency of the floodway revision and documentation of the approval of the revised floodway by the appropriate State agency.

2. Does the development in the floodway cause the 1% annual chance (base) elevation to increase at any location by more than 0.000 feet? ☐ Yes ☐ No ☐ N/A

3. Does the cumulative effect of all development that has occurred since the effective SFHA was originally identified cause the base flood elevation to increase at any location by more than one foot (or other increase limit if community or state has adopted more stringent criteria - even if a floodway has not been delineated by FEMA)? ☐ Yes ☐ No

If the answer to either items is Yes, please attach documentation that all requirements of Section 65.12 of the NFIP regulations have been met, regarding evaluation of alternatives, notice to individual legal property owners, concurrence of CEO, and certification that no insurable structures are impacted.

5. MAINTENANCE RESPONSIBILITY

The community is willing to assume responsibility for ☐ performing ☐ overseeing compliance with the maintenance and operation plans of the _____ flood
(Name)
control structure. If not performed promptly by an owner other than the community, the community will provide the necessary services without cost to the Federal government.

Operation and maintenance plans are attached. ☐ **Yes** ☐ **No** ☐ **N/A**

6. REVIEW FEE

The review fee for the appropriate request category has been included. ☐ Yes Fee amount: $_____

OR

This request is based on a federally sponsored flood-control project where 50 percent or more of the project's cost is federally sponsored, or the request is based on detailed hydrologic and hydraulic studies conducted by Federal, State, or local agencies to replace approximate studies conducted by FEMA and shown on the effective FIRM; thus the project is fee exempt. ☐ Yes

Please see Instructions for Fee Amounts

7. SIGNATURE

Note: **I understand that my signature indicates that all information submitted in support of this request is correct**

_____
Signature of Revision Requester

_____
Printed Name and Title of Revision Requester

_____
Company Name

_____
Telephone No. Date

Note: **Signature indicates that the community understands, from the revision requester, the impacts of the revision on flooding conditions in the community.**

_____
Signature of Community Official

_____
Printed Name and Title of Community Official

_____
Community Name

_____
Telephone No. Date

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is in accordance with 44 CFR Ch. 1, Sect 65.2

_____
Signature

_____
Printed Name and Title of Revision Requester

Registr No._____ Expires (Date)_____ State ____

Type of License/Expertise: _____

Check which forms have been included with this request

Form Name and (Number)	Required if .....
☐ **Hydrologic** (3)	new or revised discharges
☐ **Hydraulic** (4)	new or revised water-surface elevations
☐ **Mapping** (5)	floodplain/floodway changes
☐ **Channelization** (6)	channel is modified
☐ **Bridge/Culvert** (7)	addition/revision of bridge/culvert
☐ **Levee/Floodwall** (8)	addition/revision of levee/floodwall
☐ **Coastal** (9)	new or revised coastal elevations
☐ **Coastal Structures** (10)	addition/revision of coastal structure
☐ **Dam** (11)	addition/revision of dam
☐ **Alluvial Fan** (12)	structures proposed on alluvial fan

FEDERAL EMERGENCY MANAGEMENT AGENCY **CREDIT CARD INFORMATION**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 6 minutes per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

If paying by credit card, this form must be completed. **THIS FORM SHOULD NOT BE INCLUDED WITH THE REST OF THE FORMS PACKAGE. IT MUST BE MAILED OR FAXED TO:**

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Case # _____(if known) Amount: $_____

☐ FEE ☐ ADDITIONAL FEE ☐ INVOICE

☐ VISA ☐ MASTERCARD

CARD NUMBER: _____

EXPIRATION DATE: _____

_____
Signature

NAME (AS IT APPEARS ON CARD): _____
(please print)

ADDRESS: _____
(for your credit card receipt- please print) _____

DAYTIME PHONE: _____

NOTICE: A COPY OF FORM 1, BEING SUBMITTED FOR THIS REQUEST MUST BE ATTACHED TO THIS FORM.

FEDERAL EMERGENCY MANAGEMENT AGENCY **HYDROLOGIC ANALYSIS**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average **3.67** hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Se comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collectic Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Note: Fill out one form for each flooding source studied

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. REASON FOR NEW HYDROLOGIC ANALYSIS

☐ No existing analysis ☐ Improved data ☐ Changed physical condition of watershed

☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Other

For the reason stated above, please attach a detailed explanation. If a computer program/model was used in revising the hydrologic analysis, **please provide a diskette with the input files** for the same flood recurrence intervals contained in the FIS for that stream; and at least for the 1% annual chance (base) flood where no detailed study exists.

Explanation provided: ☐ Yes ☐ No **Diskettes provided:** ☐ Yes ☐ No

2. METHODOLOGY FOR NEW ANALYSIS

Indicate Method	Required Data	Data Included
☐ Statistical Analysis of Gage Records	Form 3 - Attachment A	☐ Yes ☐ No
☐ Regional Regression Equations	Form 3 - Attachment C	☐ Yes ☐ No
☐ Precipitation/Runoff Model	Form 3 - Attachment D	☐ Yes ☐ No
☐ Other	Back-up computations and supporting data	☐ Yes ☐ No

3. APPROVAL OF ANALYSIS

The hydrologic analysis has already been approved by a local, state, or Federal Agency. ☐ Yes ☐ No ☐ Not Required

If Yes, attach evidence of approval. ☐ **Approval attached.** If No, attach explanation. ☐ **Explanation attached.**

4. COMPARISON OF BASE FLOOD DISCHARGES

Location	Drainage Area (SqMi)	FIS(cfs)	Revised (cfs)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Note: When revised discharges are not significantly different than the FIS discharges, FEMA may require a confidence limits analysis (see attachment B) at a later date to complete the review.

If only a portion of a detailed study area was revised please attach an explanation describing the transition from the proposed discharges to the effective discharges. ☐ **Explanation Included** ☐ **Explanation Not Required**

5. HISTORICAL FLOODING INFORMATION

If historical data are available for the flooding source please provide: Location, peak discharges/water-surface elevations and dates, ar source of information. ☐ **Data Attached** ☐ **Data Not Available**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

ATTACHMENT A: STATISTICAL ANALYSIS OF GAGE RECORDS

Gaging Station: _____

Gage Location (latitude and longitude): _____

	FIS:		Revised:	
1. Number of years of data				
Systematic				
Historical				
2. Homogeneous data	☐ Yes	☐ No	☐ Yes	☐ No
3. Data adjustments	☐ Yes	☐ No	☐ Yes	☐ No
4. Number of high outliers				
Low outliers				
Zero events				
5. Generalized skew				
6. Station skew				
7. Adopted skew				
8. Probability distribution used (justify if log-Pearson III was not used)				
9. Transfer equations to ungaged sites			☐ Yes	☐ No

If Yes, specify method

_____

_____

_____

10. Expected probability* ☐ Yes ☐ No

11. Comparison of results with other analyses ☐ Yes ☐ No

If Yes, describe comparison

_____

_____

_____

_____

_____

12. **Attach analysis including plot of flood-frequency curve. Analysis Attached?** ☐ Yes ☐ No

*FEMA does not accept expected probability analyses for the purpose of reflecting flood hazard information in a FIS.

If any data are not available, indicate by N/A.

ATTACHMENT B: CONFIDENCE LIMITS EVALUATION

Stream: _____

Select one location for Confidence Limits Evaluation (*describe location*): _____

_____

1. Discharges for selected location:

Exceedence Probability		FIS:	Revised:
10%	(10-year)	_____ cfs	_____ cfs
2%	(50-year)	_____ cfs	_____ cfs
1%	(100-year)	_____ cfs	_____ cfs
0.2%	(500-year)	_____ cfs	_____ cfs

2. 1% Annual Chance (Base) Flood Confidence Intervals

90% Confidence Interval: 5% limit _____ cfs

95% limit _____ cfs

50% Confidence Interval: 25% limit _____ cfs

75% limit _____ cfs

3. If the discharge of the base flood in the FIS is beyond the 50% confidence interval but within the 90% confidence interval, does the Base flood elevation change by 1.0 foot or more? ☐ Yes ☐ No

An example of confidence limits analysis can be found in Appendix 9 of Bulletin 17B.

4. **Confidence Limits Analysis Attached?** ☐ Yes ☐ No

ATTACHMENT C: REGIONAL REGRESSION EQUATIONS

1. Bibliographical Reference:

_____

_____

_____

(Attach a copy of title page, table of contents, and pertinent pages including equations.)

2. Gaged or ungaged stream: _____

3. Hydrologic region(s): _____
Attach backup map.

4. Provide parameters, values, and source of data used to define parameters.

_____

_____

_____

	FIS:		Revised:	
5. Urbanized conditions calculations	☐ Yes	☐ No	☐ Yes	☐ No
6. Percent of watershed urbanization	_____		_____	
7. Is the watershed controlled?	☐ Yes	☐ No	☐ Yes	☐ No
8. Comparison with other analyses	☐ Yes	☐ No	☐ Yes	☐ No

If the answer to 5, 7, or 8 is Yes, explain methodology below. If data are not available, indicate with N/A.

Comments

_____

_____

_____

_____

_____

9. **Attach computation and supporting maps, delineating the watershed boundary and drainage area divides.**

Computation and Supporting Maps provided? ☐ Yes ☐ No

ATTACHMENT D: PRECIPITATION/RUNOFF MODEL

	FIS:		Revised:	
1. Method or model used:				
Version:				
Date:				
2. Source of rainfall depth:				
3. Source of rainfall distribution:				
4. Rainfall duration:				
5. Areal adjustment to precipitation (%):				
6. Maximum overland flow length				
7. Hydrograph development method:				
8. Loss rate method:				
Source of soils information:				
Source of land use information:				
9. Channel routing method:				
10. Reservoir routing:	☐ Yes	☐ No	☐ Yes	☐ No
11. Baseflow considerations:	☐ Yes	☐ No	☐ Yes	☐ No

If Yes, explain below how baseflow was determined:

12. Snowmelt considerations:	☐ Yes	☐ No	☐ Yes	☐ No
13. Model calibration:	☐ Yes	☐ No	☐ Yes	☐ No

If Yes, explain below how calibration was performed

14. Future land use condition:	☐ Yes	☐ No	☐ Yes	☐ No

If Yes, explain why below

15. **Attach precipitation/runoff model, hydrologic model schematic, curve number calculations, time of concentration calculations, and supporting maps, delineating the watershed boundary and drainage area divides.**

Information and Maps provided? ☐ Yes ☐ No

NOTE: FEMA policy is to base flooding on existing conditions

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE HYDRAULIC ANALYSIS**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2.25 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Note: Fill out one form for each flooding source studied

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. REACH TO BE REVISED

Describe the limits of the revision **OR** submit a copy of the FIRM with the revision area clearly highlighted.
Copy of FIRM(s) attached depicting area of the revision (highlighted, or circled)? ☐ Yes

Downstream Limit: _____

Upstream Limit: _____

2. MODELS SUBMITTED

Requirements: for areas which have detailed flooding:	**for areas which do not have detailed flooding:**
Full input and output listings along with files on diskette for each of the models listed below (items 1-4) and a summary of the source of input parameters used in the models must be provided. The summary must include a description of any changes made from model to model (e.g., Duplicate Effective model to Corrected Effective model). At a minimum, the Duplicate Effective (item 1) and the Revised or Post-Project Conditions (item 4) models must be submitted. See instructions for directions on when other models may be required.	Only the 100-year (Base) flood profile is required. A hydraulic model is not required for areas which do not have detailed flooding; however, BFEs may not be added to the revised FIRM. If a hydraulic model is developed for the area, items 3 and 4 described below must be submitted.

If hydraulic models are not developed, hydraulic analyses (including all calculations) for existing or pre-project conditions and revised or post-project conditions must be submitted.

1. Duplicate Effective Model ☐ Natural File Name _____ ☐ Floodway File Name _____
Copies of the hydraulic analysis used in the effective FIS, referred to as the effective models (10-, 50-, 100-, and 500-year multi-profile runs and the floodway run) must be obtained and then reproduced on the requester's equipment to produce the Duplicate Effective model. This is required to assure that the effective models input data has been transferred correctly to the requester's equipment and to assure that the revised data will be integrated into the effective data to provide a continuous FIS model upstream and downstream of the revised reach.

2. Corrected Effective Model ☐ Natural File Name _____ ☐ Floodway File Name _____
The Corrected Effective model is the model that corrects any errors that occur in the Duplicate Effective model, adds any additional cross sections to the Duplicate Effective model, or incorporates more detailed topographic information than that used in the currently effective model. The Corrected Effective model must not reflect any man-made physical changes since the date of the effective model. An error could be a technical error in the modeling procedures, or any construction in the floodplain that occurred prior to the date of the effective model but was not incorporated into the effective model.

3. Existing or Pre-Project Conditions Model ☐ Natural File Name _____ ☐ Floodway File Name _____
The Duplicate Effective model or Corrective Effective model is modified to produce the Existing or Pre-Project Conditions model to reflect any modifications that have occurred within the floodplain since the date of the Effective model but prior to the construction of the project for which the revision is being requested. If no modification has occurred since the date of the effective model, then this model would be identical to the Corrected Effective model or Duplicate Effective model.

4. Revised or Post-Project Conditions Model ☐ Natural File Name _____ ☐ Floodway File Name _____
The Existing or Pre-Project Conditions model (or Duplicate Effective model or Corrected Effective model, as appropriate) is revised to reflect revised or post-project conditions. This model must incorporate any physical changes to the floodplain since the effective model was produced as well as the effects of the project. When the request is for the proposed project this model must reflect proposed conditions.

5. Other - Please attach a sheet describing all other models submitted along with the file names. ☐ Natural ☐ Floodway

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. STARTING WATER-SURFACE ELEVATIONS

Explain how they were determined. Explanation Attached? ☐ Yes ☐ No

NOTE: If the effective study is an approximate study, the slope/area method is recommended. For detailed analysis studies, using a known water-surface elevation is recommended.

4. RESULTS (from the model used to revise the 100-year water surface elevations)

If the results indicate any of the following, attach an explanation - to this form, or to the hydraulic model printout- as to the reasonableness of the situation.

☐ Supercritical depth ☐ Critical Depth ☐ Drawdowns ☐ Negative Floodway Surcharges

☐ Floodway Surcharges Greater Than Maximum Allowed by Community/State

☐ Water surface elevations higher than the end points of cross sections.

☐ Floodway discharge is different than the Natural 100-year (base) flood discharge.

☐ Project causes 100-year floodplain or floodway elevations to increase (state if increases are located off the requester's property)

Explanation attached with Form ☐ **Explanation provided on attached printout** ☐

If Hydraulic model used is HEC-2, has it been checked with FEMA'S CHECK-2 computer program? ☐ **Yes** ☐ **No**
(see instructions for information on how to obtain CHECK-2)

5. REVISED FIRM/FBFM AND FLOOD PROFILES

1. Profile Transition

a. 100-Year Water-Surface Elevations - indicate the difference in water surface elevations where the project 100-year elevations tie into the existing 100-year water surface elevations at each end of the project.

Downstream End _____ (*Cross-Section #*) within _____ (feet) Upstream End _____ (*Cross-Section #*) within _____ (feet)

b. Floodway Elevations - indicate the difference in water surface elevations where the project floodway elevations tie into the existing floodway water surface elevations at each end of the project.

Downstream End _____ (*Cross-Section #*) within _____ (feet) Upstream End _____ (*Cross-Section #*) within _____ (feet)

c. Floodway widths - indicate the difference in floodway widths where the project floodway widths tie into the existing floodway width at each end of the project.

Downstream End _____ (*Cross-Section #*) within _____ (feet) Upstream End _____ (*Cross-Section #*) within _____ (feet)

2. Profile Checklist (check box if information has been provided on profile)

The following information (unless in parentheses) must be included at the same scale as the existing profiles for this project:

☐ Stream Name ☐ Community Name ☐ Corporate Limits labeled ☐ Study limits labeled

☐ Confluences labeled ☐ Channel Stationing ☐ Streambed profiled ☐ Cross Sections labeled

☐ Horizontal/Vertical Scales indicated ☐ 100-year elevs profiled*

☐ Road Crossings ☐ Labeled ☐ Low Chord Elevations ☐ Top of Road Elevations

*All recurrence intervals in the effective study must also be profiled.

Floodway Data Table

Attach a Floodway Data Table for each cross section listed in the published Floodway Data table in the FIS report.

Floodway Data Table Attached ☐ **Yes** ☐ **Not Required**

FEDERAL EMERGENCY MANAGEMENT AGENCY **RIVERINE/COASTAL MAPPING**	O.M.B No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.5 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Note: Fill out one form for each flooding source studied

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

This is a ☐ Manual ☐ Digital submission. *Digital map submissions may be used to update digital FIRMs (DFIRMs). For updating DFIRMs, these submissions must be coordinated with FEMA Headquarters as far in advance as possible.*

1. MAPPING CHANGES

1. A topographic workmap must be submitted showing the following information (check N/A when not applicable):

a. Revised approximate 100-year floodplain boundaries (Zone A)	☐ Yes	☐ No	☐ N/A
b. Revised detailed 100- and 500-year floodplain boundaries.	☐ Yes	☐ No	☐ N/A
c. Revised floodway boundaries	☐ Yes	☐ No	☐ N/A
d. Location and alignment of all cross sections with stationing control indicated.	☐ Yes	☐ No	☐ N/A
e. Stream alignments, road alignments and dam alignments.	☐ Yes	☐ No	☐ N/A
f. Current community boundaries.	☐ Yes	☐ No	☐ N/A
g. Effective 100-year floodplain and floodway boundaries from FIRM/FBFM reduced or enlarged to the scale of the topographic workmap	☐ Yes	☐ No	☐ N/A
h. Tie-ins between the effective and revised 100-, 500-year and floodway boundaries	☐ Yes	☐ No	☐ N/A
i. The requester's property boundaries and community easements	☐ Yes	☐ No	☐ N/A
j. The signed certification of a registered professional engineer	☐ Yes	☐ No	☐ N/A
k. Location and description of reference marks	☐ Yes	☐ No	☐ N/A
l. Vertical datum (example: NGVD, NAVD)	☐ Yes	☐ No	☐ N/A
m. Coastal zone designations tie into adjacent areas not being revised	☐ Yes	☐ No	☐ N/A
n. Location and alignment of all coastal transects used to revise the coastal analyze	☐ Yes	☐ No	☐ N/A
o. V-zone has been delineated to extend landward to the heel of the primary frontal dune	☐ Yes	☐ No	☐ N/A

If any items are marked No or N/A please attach an explanation.

2. What is the source and date of the updated topographic information (example: orthophoto maps, July 1985; filed survey, May 1979, beach profile, June 1987 etc.)?

_____

3. What is the scale and contour interval of the following workmaps?

Effective FIS Scale _____ Contour Interval _____

Revision Request Scale _____ Contour Interval _____

NOTE: Revised topographic information must be of equal or greater detail than effective.

4. Attach an annotated FIRM/FBFM at the scale of the effective FIRM/FBFM showing the revised 100- and 500-year floodplain and the floodway boundaries and how they tie into those shown on the effective FIRM/FBFM downstream and upstream of the revisions or adjacent to the area of revision for coastal studies. **FIRM/FBFM attached? ☐ Yes ☐ No**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

2. EARTH FILL PLACEMENT

1. The fill is: ☐ Existing ☐ Proposed

2. Has fill been/will be placed in the regulatory floodway? ☐ Yes ☐ No
   If Yes, please attach completed Riverine Hydraulic Analysis Form (Form 4).

3. Has fill been/will be placed in floodway fringe (*area between the floodway and 100-year floodplain boundaries*)? ☐ Yes ☐ No

   If Yes, then complete A, B, C, and D below.

   a. Are fill slopes for granular materials steeper than one vertical on one-and-one-half horizontal? ☐ Yes ☐ No

      If Yes, justify steeper slopes _____

      _____

   b. Is adequate erosion protection provided for fill slopes exposed to moving flood waters? (*Slopes exposed to flows with velocities of up to 5 feet per second (fps) during the 100-year flood must, at a minimum, be protected by a cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the 100-year flood must, at a minimum, be protected by stone or rock riprap.)*

      ☐ Yes ☐ No

      If No, describe erosion protection provided _____

      _____

   c. Has all fill placed in revised 100-year floodplain been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test Method or acceptable equivalent method? ☐ Yes ☐ No

   d. Can structures conceivably be constructed on the fill at any time in the future? ☐ Yes ☐ No

   If Yes, attach certification of fill compaction (item 3c. above) by the community's NFIP permit official, a registered professional Engineer, or an accredited soils engineer in accordance with Subparagraph 65.5(a)(6) of the NFIP regulations.

   Fill certification attached ☐ **Yes** ☐ **No**

4. Has fill been/will be placed in a V zone? ☐ Yes ☐ No

   If Yes, is the fill protected from erosion by a flood control structure such as a revetment or seawall?

   ☐ Yes ☐ No

   If Yes, attach the Coastal Structures Form (Form 10).

FEDERAL EMERGENCY MANAGEMENT AGENCY **CHANNELIZATION**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.75 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. REACH TO BE REVISED

Describe the limits of the revision **OR** submit a copy of the FIRM with the revision area clearly highlighted.
Copy of FIRM(s) attached depicting area of the revision (highlighted, or circled)? ☐ Yes

Downstream Limit: _____

Upstream Limit: _____

2. CHANNEL DESCRIPTION

Attach the following information about the channel (check box if information has been provided):

☐ Description of the inlet and outlet

☐ Description of the shape of the channel *(both cross sectional and planimetric configuration)* and its lining *(channel bottom and sides)*:

3. ACCESSORY STRUCTURES

The channelization includes:

☐ Levees *(Attach Levee/Floodwall System Analysis Form - Form 8)*
☐ Drop structures
☐ Superelevated sections
☐ Transitions in cross sectional geometry
☐ Debris basin/detention basin
☐ Energy dissipater
☐ Other (Describe):

4. DRAWING CHECKLIST

Attach the plans of the channelization certified by a registered professional engineer. The plan detail and information should include (check box if information has been provided):

☐ Channel alignment and locations of inlet, outlet, and accessory structures

☐ Channel lining

☐ Typical cross sections and profiles of channel banks and invert

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

5. HYDRAULIC CONSIDERATIONS

1. The channel was designed to carry _____ (cfs) and/or the _____-year flood.

2. The design elevation in the channel based on:

   ☐ Subcritical flow

   ☐ Critical flow

   ☐ Supercritical flow

   ☐ Energy grade line

3. **If there is the potential for a hydraulic jump at the following locations, check the box(es) that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.**

Inlet to channel?	☐ Yes	☐ No
Outlet of channel?	☐ Yes	☐ No
At Drop Structures?	☐ Yes	☐ No
At Transitions?	☐ Yes	☐ No
Other locations?	☐ Yes	☐ No

Explanation Attached? ☐ **Yes** ☐ **No** ☐ **N/A**

6. SEDIMENT TRANSPORT CONSIDERATIONS

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the 100-year (base flood) water-surface elevations; and/or based on the stream geomorphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including sewer and deposition) to affect the base flood water-surface elevations, then provide the following information **(Check the box if provided):**

☐ Estimated sediment load

☐ Method used to estimate sediment transport

☐ Method used to estimate scour and/or deposition

☐ Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport

FEDERAL EMERGENCY MANAGEMENT AGENCY **BRIDGE/CULVERT**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 2 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. IDENTIFIER

1. Name of structure (roadway, railroad, etc.): _____

2. Location of bridge/culvert along flooding source (in terms of stream distance or cross-section identifier):

   _____

3. This revision reflects (check one of the following):

   ☐ New bridge/culvert not modeled in the FIS

   ☐ Modified bridge/culvert previously modeled in the FIS

   ☐ New analysis of bridge/culvert previously modeled in the FIS

4. Hydraulic model used to analyze the structure *(e.g., HEC-2 with special bridge routine, WSPRO, HY8)*

   _____

   If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structure(s). *(Attach justification)*

   Justification attached ☐ **Yes** ☐ **No** ☐ **N/A**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

2. DRAWING CHECKLIST

Attach plans of the structure(s) certified by a registered professional engineer. The plan detail and information should include the following (check the boxes if the information has been provided):

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Low Chord Elevations - Upstream and Downstream
- ☐ Top of Road Elevations - Upstream and Downstream
- ☐ Structure Invert Elevations - Upstream and Downstream
- ☐ Stream Invert Elevations - Upstream and Downstream
- ☐ Skew Angle
- ☐ Cross-Section Locations
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection

3. SEDIMENT TRANSPORT CONSIDERATIONS

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the 100-year (base flood) water-surface elevations: and/or based on the stream geomorphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including sewer and deposition) to affect the base flood elevations, then provide the following information **(Check the box if provided):**

- ☐ Estimated sediment load
- ☐ Method used to estimate sediment transport
- ☐ Method used to estimate scour and/or deposition
- ☐ Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport

FEDERAL EMERGENCY MANAGEMENT AGENCY **LEVEE/FLOODWALL SYSTEM ANALYSES**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 3.0 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. REACH TO BE REVISED

Describe the limits of the revision **OR** submit a copy of the FIRM with the revision area clearly highlighted.
Copy of FIRM(s) attached depicting area of the revision (highlighted, or circled)? ☐ Yes

Downstream Limit: _____

Upstream Limit: _____

2. LEVEE/FLOODWALL SYSTEM ELEMENTS

1. This Levee/Floodwall analysis is based on:

   ☐ upgrading of an existing levee/floodwall system
   ☐ a newly constructed levee/floodwall system
   ☐ reanalysis of an existing levee/floodwall system

2. Levee elements and locations are:

   ☐ earthen embankment, dike, berm, etc. Station _____ to _____

   ☐ structural floodwall Station _____ to _____

   ☐ other (describe): _____ Station _____ to _____

3. Structural Type:

   ☐ monolithic cast-in place reinforced concrete
   ☐ reinforced concrete masonry block
   ☐ sheet piling
   ☐ other (describe): _____

4. Has this levee/floodwall system been certified by a Federal agency to provide protection against the 1% annual chance (100-year) Flood event? ☐ Yes ☐ No

If Yes, by which agency? _____

If Yes, complete only the interior drainage section on pages 7 and 8 of this form and the operation and Maintenance section of Revision Requestor and Community Official Form.

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

2. LEVEE/FLOODWALL SYSTEM ELEMENTS (Cont'd)

5. Attach certified drawings containing the following information (indicate drawing sheet numbers):

a. Plan of the levee embankment and floodwall structures. Sheet Numbers _____

b. A profile of the levee/floodwall system showing the 100-year water-surface (base flood) elevation, levee and/or wall crest and foundation, and closure locations for the total levee system. Sheet Numbers _____

c. A profile of the base flood elevation, closure opening outlet and inlet invert elevations, type and size of opening, and kind of closure device. Sheet Numbers _____

d. A layout detail for the embankment protection measures. Sheet Numbers _____

e. Location, layout, and size and shape of the levee embankment features, foundation treatment, floodwall structure, closure structures, and pump stations. Sheet Numbers _____

3. FREEBOARD

1. The minimum freeboard provided above the base flood elevation is:

Riverine

3.0 feet or more at the downstream end and throughout ☐ Yes ☐ No
3.5 feet or more at the upstream end ☐ Yes ☐ No
4.0 feet immediately upstream of all structures and constrictions ☐ Yes ☐ No

Coastal

1.0 foot above the height of the one percent wave for the 100-year stillwater surge elevation or maximum wave runup (whichever is greater). ☐ Yes ☐ No

2.0 feet above 100-year stillwater surge elevation ☐ Yes ☐ No

Please note, occasionally exceptions are made to the minimum freeboard requirement. If an exception is requested, attach documentation Addressing Part 65.10(b)(1)(ii) of the National Flood Insurance Program regulations.

If No is answered to any of the above, please attach an explanation.

2. Is there an indication from historical records that ice-jamming can effect the base flood elevation? ☐ Yes ☐ No
If Yes, provide ice-jam analysis profile and evidence that the minimum freeboard discussed above still exists.

3. Tabulate the elevations at critical locations (tabulate values at each levee crest grade change, and where sediment may accumulate such as along bends in the channel.)

Station	Location	100-year Water Surface Elevation	Levee Crest	Freeboard (ft.)
	Upper end			
	Lower end			

(Extend table on an added sheet as needed and reference)

4. SEDIMENT TRANSPORT CONSIDERATIONS

If there is any indication from historical records that sediment transport (including scour and deposition) can affect the 100-year water-surface (base flood) elevations; and/or based on the stream geomorphology, vegetative cover, development of the watershed and bank conditions, there is a potential for debris and sediment transport (including sewer and deposition) to affect the base flood elevations, then provide the following information:

- ☐ Estimated sediment load
- ☐ Method used to estimate sediment transport
- ☐ Method used to estimate scour and/or deposition
- ☐ Method used to revise hydraulic or hydrologic analysis (model) to account for sediment transport

5. CLOSURES

1. Openings through the levee system:

☐ exist ☐ do not exist

If openings exist, list all closures:

Channel Station	Left or Right Bank	Opening Type	Highest Elevation for Opening Invert	Type of Closure Device

(Extend table on an added sheet as needed and reference)

Note:
Geotechnical and geologic data

In addition to the required detail analysis reports, data obtained during field and laboratory investigations and used in the design analysis for the following levee system features should be submitted in a tabulated summary form. (Reference U.S. Army Corps of Engineers EM-1110-2-1906 Form 2086).

6. EMBANKMENT PROTECTION

1. The maximum levee slope landside is: _____

2. The maximum levee slope floodside is: _____

3. The range of 100-year (base) riverine flood velocities along the levee? _____ (min.) to _____ (max.)

4. Embankment material is protected by (describe the kind): _____

_____

_____

5. Riprap Design Parameters: (Include references) ☐ Velocity ☐ Tractive stress

Reach		Sideslope	Flow Depth	Velocity	Curve or Straight	Stone Riprap			Depth of Toedown
						D_{100}	D_{50}	Thickness	
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								
Sta	to								

(Extend table on an added sheet as needed and reference)

6. Is a bedding/filter analysis and design attached? ☐ Yes ☐ No

7. Describe the analysis used for other kinds of protection used (include copies of the design analysis):

_____

Note: Attach engineering analysis to support construction plans.

7. EMBANKMENT AND FOUNDATION STABILITY

1. Identify locations and describe the basis for selection of critical location for analysis: _____

_____

☐ Overall height: Sta _____, height _____ ft.

☐ Limiting foundation soil strength:

Sta _____, depth _____ to _____

Strength Ø = _____ degrees, c = _____ psf

slope: SS = _____ (h) to _____ (v)

(Repeat as needed on an added sheet for additional locations)

2. Specify the embankment stability analysis methodology used (e.g., circular arc, sliding block, infinite slope, etc.):

3. Summary of stability analysis results:

Case	Loading Conditions	Critical Safety Factor	Criteria (Min.)
I	End of construction		1.3
II	Sudden drawdown		1.0
III	Critical flood stage		1.4
IV	Steady seepage at flood stage		1.4
VI	Earthquake (Case I)		1.0

(Reference: U.S. Army Corps of Engineers (USACE) EM-1110-2-1913 Table 6-1)

4. Was a seepage analysis for the embankment performed? ☐ Yes ☐ No

If Yes, describe methodology used: _____

_____

5. Was a seepage analysis for the foundation performed: ☐ Yes ☐ No

6. Were uplift pressures at the embankment landside toe checked? ☐ Yes ☐ No

7. Were seepage exit gradients checked for piping potential? ☐ Yes ☐ No

8. The duration of 100-year (base) flood hydrograph against the embankment is _____ hours.

Note: Attach engineering analysis to support construction plans.

8. FLOODWALL AND FOUNDATION STABILITY

1. Describe analysis submittal based on Code:

   ☐ UBC (1988) or ☐ Other (specify):

2. Stability analysis submitted provides for:

   ☐ Overturning ☐ Sliding; If not, explain: _____

   _____

3. Loading included in the analyses were:

   ☐ Lateral earth @ P_A = _____ psf; P_p = _____ psf

   ☐ Surcharge-Slope @ _____, ☐ surface _____ psf

   ☐ Wind @ P_w = _____ psf

   ☐ Seepage (Uplift); _____ ☐ Earthquake @ P_{eq} = _____ %g

   ☐ 100-year significant wave height _____ ft.

   ☐ 100-year significant wave period _____ sec.

4. Summary of Stability Analysis Results: Factors of Safety. Itemize for each range in site layout dimension and loading condition limitation for each respective reach.

Loading Condition	Criteria (Min)		Sta	To	Sta	To
	Overturn	Sliding	Overturn	Sliding	Overturn	Sliding
Dead & Wind	1.5	1.5				
Dead & Soil	1.5	1.5				
Dead, Soil, Flood, & Impact	1.5	1.5				
Dead, Soil, & Seismic	1.3	1.3				

(Ref: FEMA 114 Sept 1986; USACE EM 1110-2-2502)

(Note: Extend table on an added sheet as needed and reference)

5. Foundation bearing strength for each soil type:

Bearing Pressure	Sustained Load (psf)	Short Term Load (psf)
Computed design maximum		
Maximum allowable		

6. Foundation scour protection ☐ is, ☐ is not provided. Describe if provided:

   _____

   _____

   _____

Note: Attach engineering analysis to support construction plans.

9. SETTLEMENT

1. Has anticipated potential settlement been determined and incorporated into the specified construction elevations to maintain the established freeboard margin? ☐ Yes ☐ No

2. The computed range of settlement is _____ ft. to _____ ft.

3. Settlement of the levee crest is determined to be primarily from:

   ☐ Foundation consolidation
   ☐ Embankment compression
   ☐ Other (describe):

4. Differential settlement of floodwalls

   ☐ has ☐ has not been accommodated in the structural design and construction.

Note: Attach engineering analysis to support construction plans.

10. INTERIOR DRAINAGE

1. Specify size of each interior watershed

   Draining to pressure conduit: _____

   Draining to ponding area: _____

2. Relationships Established

Ponding elevation vs. storage	☐ Yes	☐ No
Ponding elevation vs. gravity flow	☐ Yes	☐ No
Differential head vs. gravity flow	☐ Yes	☐ No

3. The river flow duration curve is enclosed ☐ Yes ☐ No

4. Specify the discharge capacity of the head pressure conduit: _____

5. Which Flooding Conditions Were Analyzed?

• Gravity flow (Interior Watershed)	☐ Yes	☐ No
• Common storm (River Watershed)	☐ Yes	☐ No
• Historical ponding probability	☐ Yes	☐ No
• Coastal wave overtopping	☐ Yes	☐ No

If No, explain why not: _____

_____

_____

6. Interior drainage has been analyzed based on joint probability of interior and exterior flooding and the capacities of pumping and outlet facilities to provide the established level of flood protection. ☐ Yes ☐ No

If No, explain why not: _____

_____

7. The rate of seepage through the levee system for the 100-year (base) flood is _____ cfs

10. INTERIOR DRAINAGE (Cont'd)

8. The length of levee system used to drive this seepage rate in item 7: _____ ft.

9. Will a pumping plant(s) be used for interior drainage? ☐ Yes ☐ No

If Yes, include the number of pumping plants: _____
For each pumping plant, list:

	Plant #1	Plant #2
The number of pumps		
The ponding storage capacity		
The maximum pumping rate		
The maximum pumping head		
The pumping starting elevation		
The pumping stopping elevation		
Is the discharge facility protected?		
Is there a flood warning plan?		
How much time is available between warning and flooding?		

Will the operations be automatic? ☐ Yes ☐ No
If the pumps are electric, are there backup power sources? ☐ Yes ☐ No

(Reference: U.S. Army Corps of Engineers EM-1110-2-3101, 3102, 3103, 3104, and 3105)

Note: Include a copy of supporting documentation of data and analysis. Provide a map showing the flooded area and maximum ponding elevations for all interior watersheds that result in flooding.

11. OTHER DESIGN CRITERIA

1. The following items have been addressed as stated:

   Liquefaction ☐ is ☐ is not a problem
   Hydrocompaction ☐ is ☐ is not a problem
   Heave differential movement due to soils of high shrink/swell ☐ is ☐ is not a problem

2. For each of these problems, state the basic facts and corrective action taken:

   _____

   _____

   _____

3. If the levee/floodwall is new or enlarged, will the structure adversely impact flood levels and/or flow velocities floodside of the structure? ☐ Yes ☐ No

Note: Attach supporting documentation

12. OPERATIONAL PLAN AND CRITERIA

1. Are the planned/installed works in full compliance with NFIP regulations, Section 44 CFR Ch. 1 1.65.10

   ☐ Yes ☐ No

2. Does the operation plan incorporate all the provisions for closure devices as required in Section 65.10(c)(1), of the NFIP regulations?

   ☐ Yes ☐ No

3. Does the operation plan incorporate all the provisions for interior drainage as required in Section 65.10(c)(2), of the NFIP regulations?

   ☐ Yes ☐ No

If the answer is No to any of the above, please explain below.

FEDERAL EMERGENCY MANAGEMENT AGENCY **COASTAL ANALYSIS**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.0 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Se comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collectic Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148). Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. COASTLINE TO BE REVISED

Describe limits of study area:

_____

_____

2. EFFECTIVE FIS

The area being revised was studied in the FIS using (Check all that apply):

- ☐ Approximate methods
- ☐ Only the stillwater surge elevation designated
- ☐ Detailed methods with:
  - ☐ Wave setup computations
  - ☐ Wave runup computations
  - ☐ Wave height computations
  - ☐ Dune erosion computations
  - ☐ Storm surge modeling. Specify model used:
    - ☐ SPLASH
    - ☐ TTSURGE
    - ☐ FEMA STORM SURGE
    - ☐ SLOSH
    - ☐ WIFM
    - ☐ OTHER: _____

3. REVISED ANALYSIS

Number of transects in revised analysis _____

Check all analyses used to prepare the revision:

- ☐ Wave setup analyses (complete Items 1, 2, and 3)
- ☐ Stillwater elevation determinations (complete Item 1)
- ☐ Erosion considerations (complete Item 2)
- ☐ Wave height analysis (complete Items 2 and 3)
- ☐ Wave runup analysis (complete Items 2 and 3)
- ☐ Wave overtopping assessment (complete Items 2 and 3)
- ☐ Reflect more detailed topographic information (Form 2)
- ☐ Reflect shore protection structures (attach completed Coastal Structures Form - Form 10)
- ☐ Other

If other, give basis of revision request with an explanation:

_____

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. REVISED ANALYSIS (CONTINUED)

1. Stillwater Elevation Determinations

a. How were stillwater elevations determined?

- ☐ Gage analysis
- ☐ Storm surge analysis
- ☐ Other - explain below:

_____

_____

If revised gage analysis, list gages utilized:

Gage Number	Number of Years of Record	Gage Site Location

Provide copies of gage data and revised analysis.

b. Specify what datum was used in the calculations: _____

If not the FIS datum, have the calculations been adjusted to the FIS datum:

☐ Yes ☐ No ☐ Specify Conversion factor: _____

c. If revised storm surge analysis, was FEMA's storm surge model utilized:

☐ Yes ☐ No

If Yes, amount of wave setup added to stillwater elevation _____ ft

d. If wave setup was computed, attach a description of methodology used. Description attached ☐ Yes ☐ No

e. If FEMA's storm surge model used, attach a detailed description of the differences between current analysis and revised analysis, and why revised analysis should replace current analysis:

Description attached ☐ Yes ☐ No

2. Revised analysis *(i.e., erosion, wave height, wave runup, and wave overtopping)*

If FEMA procedures were utilized to perform the revision, attach a detailed description of differences between the current and the revised analysis, and why the revised analysis should replace the current analysis:

Description attached ☐ Yes ☐ No

If FEMA procedures were not utilized to perform the revision, provide full documentation on methodology And/or models used, including operational program, detailed differences between methodology and/or Model utilized and FEMA's methodology and/or model. Also, attach an explanation why new methodology and/or model Should replace current methodology and/or model.

Explanation attached ☐ Yes ☐ No

3. REVISED ANALYSES (CONTINUED)

3. Wave height and wave runup analyses

Wave runup and overtopping analyses are typically considered when wave heights and/or wave runup are close to or greater than the crest of shore protection structures or natural land forms.

a. Was an overtopping analysis performed for any coastal shore protection structures or natural land forms that may be overtopped? ☐ **Yes** ☐ **No**

If Yes, attach an explanation of the methodology utilized and describe in detail the results of the analysis:

Explanation attached ☐ **Yes** ☐ **No**

b. What is the estimated amount of overtopping _____ cfs/ft.

If No, attach an explanation why these analyses were not performed.

Explanation attached ☐ **Yes** ☐ **No**

c. Was wave setup included in wave height analysis and removed for erosion and wave runup analyses? ☐ **Yes** ☐ **No**

4. RESULTS

1. Stillwater storm surge elevation _____
2. Wave setup _____
3. Minimum ground elevation within project area _____ feet NGVD
4. Maximum wave height elevation _____
5. Maximum wave runup elevation _____
6. As a result of the revised analyses, the V Zone location has shifted a maximum of _____ feet seaward and _____ feet landward of its existing position.
7. Have areas designated as coastal high hazard areas (V-zones) increased or decreased?

   ☐ Increased ☐ Decreased ☐ Both

   Attach a description where they have increased and/or decreased.

   Description attached ☐ **Yes** ☐ **No**
8. The 100-year (base) flood elevations have: ☐ increased ☐ decreased
9. What was the greatest increase? _____ Feet
10. What was the greatest decrease? _____ Feet
11. The base flood boundary has: ☐ increased ☐ decreased

    Attach a description where it has increased or decreased.

    Description attached ☐ **Yes** ☐ **No**

Please provide a map with revised shoreline due to either erosion or accretion, if appropriate.

Map Attached? ☐ **Yes** ☐ **No** ☐ **N/A**

FEDERAL EMERGENCY MANAGEMENT AGENCY COASTAL STRUCTURES	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.0 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. BACKGROUND

1. Name of structure (if applicable): _____

2. Structure location: _____

_____

3. Type of structure:

☐ Levee/dike* ☐ Bulkhead
☐ Revetment ☐ Seawall
☐ Breakwater ☐ Soft Shore Protection (i.e., sand dunes)
☐ Other: _____

*Note: If the coastal structure is a levee/floodwall, complete the Levee/Floodwall System Analyses Form (Form 8). The remainder of this form does not need to be completed.

4. Material structure is composed of:

☐ Stone ☐ Earthen fill
☐ Concrete ☐ Steel
☐ Sand ☐ Other

5. The structure is: ☐ New ☐ Existing ☐ Proposed

If existing, describe in detail the modifications being made to the structure and the purpose of the modifications: _____

6. Copies of certified "as-built" plans ☐ are ☐ are not attached. **If "as-built" plans are not available for submittal, please explain why and submit a sketch with general structure dimensions including: face slope, height, length, depth, and toe elevation referenced to the appropriate datum (example: NGVD 1929, NAVD 1988, etc.)**

7. Has a Federal agency with responsibility for the design of coastal flood protection structures designed or certified that the structure(s) has/have been adequately designed and constructed to provide protection against the base 100-year (base) flood?

☐ Yes ☐ No

If Yes, specify the name of the agency and dates of project completion and/or certification. *No other sections of this form need to be completed.* _____

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS.

2. DESIGN CRITERIA

1. Design Parameters

a. Were physical parameters representing the base flood event or greater used to design the coastal flood protection structure?
☐ Yes ☐ No

b. The number of design water levels that were evaluated _____ (number) range from mean low water _____ feet to the 100-year stillwater surge elevation of _____ feet. The critical water level is _____ feet. The datum that these elevations are referenced to is _____ (example: NGVD 1929, NAVD 1988, etc.)

c. Wave heights and periods were computed for each water level analyzed. ☐ Yes ☐ No

If No, attach an explanation specifying which water levels were analyzed:

Explanation attached ☐ **Yes** ☐ **No**

d. 100-year significant wave height is: _____

e. 100-year significant wave period is: _____

f. 100-year one-percent wave height is: _____

g. Were breaking wave forces used to design the structure? ☐ Yes ☐ No

If No, attach an explanation why they were not used for design:

2. Settlement

a. What is the settlement rate expected at the site of the structure?: _____

_____

b. **Please provide a settlement analysis.** **Settlement Analysis Attached?** ☐ Yes ☐ No

2. DESIGN CRITERIA (continued)

3. Freeboard

a. Does the structure have 1 foot of freeboard above the height of the one-percent wave for the 100-year stillwater surge elevation or maximum wave runup (whichever is greater)? ☐ Yes ☐ No

b. Does the structure have freeboard of at least 2 feet above the 100-year stillwater surge elevation: ☐ Yes ☐ No

FEMA does not typically recognize structures as providing 100-year (base) flood protection if they do not meet the freeboard criteria listed above. Please note, occasionally exceptions are made to the minimum freeboard requirement. Please consult the National Flood Insurance Program Regulation 65.10, regarding freeboard requirements.

4. Toe Protection

Specify the type of toe protection: _____

_____

If no toe protection is provided, provide analysis of scour potential and attach an evaluation of structural stability performed with potential scour at the toe. Analysis and Evaluation Attached? ☐ Yes ☐ No ☐ N/A

5. Backfill Protection

Will the structure be overtopped during the base flood event? ☐ **Yes** ☐ **No**

If the structure will be overtopped, attach an explanation of what measures are used to prevent the loss of backfill from rundown over the structure, drainage landward, under or laterally around the ends of the structure, or through seams and drainage openings in the structure?

Explanation attached ☐ Yes ☐ No ☐ N/A

2. DESIGN CRITERIA (continued)

6. Structural Stability - Minimum water level

   a. For coastal revetments, was a geotechnical analysis of potential failure in the landward direction by rotational gravity slip performed for maximum loads associated with minimum seaward water level, no wave action, saturated soil conditions behind the structure, and maximum toe scour? ☐ Yes ☒ No

   b. For gravity and pile-supported seawalls, were engineering analyses of seaward sliding, seaward overturning, and of foundation adequately using maximum pressures developed in the sliding and overturning calculations performed? ☐ Yes ☐ No

   c. For anchored bulkheads, were engineering analyses performed for shear failure, moment failure, and adequacy of tiebacks and deadmen to resist loading under low-water conditions? ☐ Yes ☐ No

7. Structural Stability - Critical Water Level (Note: All structures must be designed to resist the maximum loads associated with the critical water level to be credited as providing 100-year protection.)

   a. For coastal revetments were geotechnical analyses performed investigating the potential failure in the seaward direction by rotational gravity slip or foundation failure due to inadequate bearing strength? ☐ Yes ☐ No

   b. For revetments, were engineering analyses of rock, riprap, or armor blocks' stability under wave action performed or uplift forces on the rock, riprap, or armor blocks? ☐ Yes ☐ No

   c. Are the rocks graded? ☐ Yes ☐ No

   d. Are soil or geotextile filters being used in the design? ☐ Yes ☐ No

   e. For gravity and pile supported seawalls, were engineering analyses of landward sliding, landward overturning, and foundation adequacy performed? ☐ Yes ☐ No

   f. For anchored bulkheads, were engineering analyses of shear and moment failure performed using "shock" pressures? ☐ Yes ☐ No

For all analyses marked No above for the appropriate type of structure, please attach an explanation why the analyses were r performed.

Explanation attached ☐ Yes ☐ No

2. DESIGN CRITERIA (continued)

8. Material Adequacy

The design life of the structure given the existing conditions at the structure site is _____ years.

9. Ice and Impact Alignment

a. Will the structure be subjected to ice forces? ☐ Yes ☐ No

If Yes, was it designed for such forces? ☐ Yes ☐ No

If Yes, attach impact analysis.

Analysis attached ☐ Yes ☐ No

b. Will the structure be subjected to impact forces from boats, ships, or large debris? ☐ Yes ☐ No

If Yes, was it designed for those impact forces? ☐ Yes ☐ No

If Yes, attach impact analysis.

Analysis attached ☐ Yes ☐ No

10. Structure Plan Alignment

The structure is (check one):

☐ isolated

☐ part of a continuous structure with redundant return walls at frequent intervals.

Please provide a map showing the location of the structure and any natural land features which shelter the structure from wave actions. Map Attached? ☐ Yes ☐ No

11. Certification

As a professional engineer, I certify that the above structure will withstand all hydraulic and wave forces associated with the 1% annual Chance flood without significant structural degradation.

Signature Date Seal

3. ADVERSE IMPACT EVALUATION

1. The structure is:
   - ☐ existing
   - ☐ new
   - ☐ an enlargement of an existing structure
   - ☐ a replacement structure of the same size and design as what was previously at the site

2. If the structure is new or enlarged, will the structure impact flooding and erosion for areas adjacent to the structure? ☐ **No** ☐ **Yes**

   If Yes, attach an explanation

   Explanation attached ☐ **Yes** ☐ **No**

4. COMMUNITY AND/OR STATE REVIEW

1. Has the design, maintenance, and impact of the structure been reviewed and approved by the community, and any Federal, State, or local agencies having jurisdiction over flood control and coastal construction activities in the area the structure impacts: ☐ Yes ☐ No

   If Yes, attach a list of agencies who have reviewed and approved the project.

   Explanation attached ☐ **Yes** ☐ **No**

   If No, attach an explanation why review and approval by the appropriate community or agency has not been obtained.

   Explanation attached ☐ **Yes** ☐ **No**

2. **Enclose all design analyses that apply. Design Analyses Attached?** ☐ **Yes** ☐ **No** ☐ **N/A**

FEDERAL EMERGENCY MANAGEMENT AGENCY DAM	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 0.5 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. IDENTIFIER

1. Name of Dam: _____

2. Location of dam along flood source (in terms of stream distance or cross section identifier):

_____

_____

_____

3. This request is for (check one of the following):

☐ Existing dam
☐ New dam
☐ Modifications of existing dam (describe modifications): _____

_____

_____

4. Was the dam designed by: ☐ Federal agency ☐ State agency ☐ Local government agency ☐ Private organization?

2. BACKGROUND

1. Does the dam have dedicated flood control storage? ☐ Yes ☐ No

2. Does the project involve revised hydrology? ☐ Yes ☐ No

If Yes, complete Hydrologic Analysis Form (Form 3) and include calculations of the 100-year inflow flood hydrograph routed through the dam with the beginning pool at the normal pool elevation (spillway crest elevation for ungated spillway). Include any inflow hydrograph bulking by watershed sediment yield and provide necessary debris and sediment yield analysis.

3. Does the revised hydrology affect the 100-year water-surface (base flood) elevation behind the dam or downstream of the dam?

☐ Yes ☐ No

If yes, complete the Riverine Hydraulic Analysis Form (Form 4) and complete the table shown on the following page.

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. RESULTS

	Stillwater Elevation Behind the Dam	
	FIS	REVISED
10-year		
50-year		
100-year		
500-year		
Normal Pool Elevation		

1. Was long-term sediment accumulation taken into consideration in determining the normal pool elevation? ☐ Yes ☐ No

2. Was the dam designed to withstand the hydrostatic and hydrodynamic forces associated with floods greater than the base flood? ☐ Yes ☐ No

   If No, the dam should not be modeled as considering the attenuation effects from the dam.

3. Provide the following data on the dam:

   Dimensional Height: _____

   Crest Elevation of top of dam: _____

   Base flood storage capacity: _____

   Freeboard (measured from base flood elevation): _____

4. Spillway(s):

   Type: ☐ gated ☐ ungated

   Dimensional Width: _____

   Dimensional Height: _____

   Crest Elevation of Top of Spillway: _____

5. Outlet(s):

   Type: ☐ gated ☐ ungated

   Width: _____

   Height: _____

   Diameter: _____

   Invert Elevation: _____

6. Explain flow regulation plan: _____

   _____

7. Are the project features, including the emergency spillway, designed to accommodate the 100-year flood discharge without overtopping the dam? ☐ Yes ☐ No

8. Was the dam designed in accordance with all currently applicable local, State, and Federal regulations? ☐ Yes ☐ No

   If No, please attach an explanation. Explanation attached ☐ Yes ☐ No

   FEMA may request a list of regulations that have been complied with and supporting documentation Demonstrating compliance with these regulations.

9. **Attach copy of formal operation and maintenance plan. Plan Attached? ☐ Yes ☐ No**

FEDERAL EMERGENCY MANAGEMENT AGENCY **DAM**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 0.5 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. IDENTIFIER

1. Name of Dam: _____

2. Location of dam along flood source (in terms of stream distance or cross section identifier):

_____

_____

_____

3. This request is for (check one of the following):

☐ Existing dam
☐ New dam
☐ Modifications of existing dam (describe modifications): _____

_____

_____

4. Was the dam designed by: ☐ Federal agency ☐ State agency ☐ Local government agency ☐ Private organization?

2. BACKGROUND

1. Does the dam have dedicated flood control storage? ☐ Yes ☐ No

2. Does the project involve revised hydrology? ☐ Yes ☐ No

If Yes, complete Hydrologic Analysis Form (Form 3) and include calculations of the 100-year inflow flood hydrograph routed through the dam with the beginning pool at the normal pool elevation (spillway crest elevation for ungated spillway). Include any inflow hydrograph bulking by watershed sediment yield and provide necessary debris and sediment yield analysis.

3. Does the revised hydrology affect the 100-year water-surface (base flood) elevation behind the dam or downstream of the dam?

☐ Yes ☐ No

If yes, complete the Riverine Hydraulic Analysis Form (Form 4) and complete the table shown on the following page.

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

3. RESULTS

	Stillwater Elevation Behind the Dam	
	FIS	REVISED
10-year		
50-year		
100-year		
500-year		
Normal Pool Elevation		

1. Was long-term sediment accumulation taken into consideration in determining the normal pool elevation? ☐ Yes ☐ No

2. Was the dam designed to withstand the hydrostatic and hydrodynamic forces associated with floods greater than the base flood? ☐ Yes ☐ No

   If No, the dam should not be modeled as considering the attenuation effects from the dam.

3. Provide the following data on the dam:

   Dimensional Height: _____

   Crest Elevation of top of dam: _____

   Base flood storage capacity: _____

   Freeboard (measured from base flood elevation): _____

4. Spillway(s):

   Type: ☐ gated ☐ ungated

   Dimensional Width: _____

   Dimensional Height: _____

   Crest Elevation of Top of Spillway: _____

5. Outlet(s):

   Type: ☐ gated ☐ ungated

   Width: _____

   Height: _____

   Diameter: _____

   Invert Elevation: _____

6. Explain flow regulation plan: _____

   _____

7. Are the project features, including the emergency spillway, designed to accommodate the 100-year flood discharge without overtopping the dam? ☐ Yes ☐ No

8. Was the dam designed in accordance with all currently applicable local, State, and Federal regulations? ☐ Yes ☐ No

   If No, please attach an explanation. Explanation attached ☐ Yes ☐ No

   FEMA may request a list of regulations that have been complied with and supporting documentation Demonstrating compliance with these regulations.

9. **Attach copy of formal operation and maintenance plan. Plan Attached?** ☐ Yes ☐ No

FEDERAL EMERGENCY MANAGEMENT AGENCY **ALLUVIAL FAN FLOODING**	O.M.B. Burden No. 3067-0148 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.0 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Flooding Source: _____

Project Name/Identifier: _____

1. AREA TO BE REVISED

Downstream limit: _____

Upstream limit: _____

Describe flood zone designation as shown on the effective FIRM for area to be revised (*i.e., Zone AO with depth and velocity, Zone AO with depth, or Zone A)*:

_____

2. TOPOGRAPHIC MAP

Attach a topographic map(s) which show the following items:

☐ The revised flood boundaries with revised depths and velocities (if applicable) that tie into the effective boundaries

☐ The correct alignment and location of all structural features

3. STRUCTURAL FLOOD CONTROL MEASURES

1. The following structures are proposed or built: ***(Check all that apply)***

   ☐ Channelization ***(Attach completed form - Form 6)***

   ☐ Levee/Floodwall ***(Attach completed form - Form 8)***

   ☐ Dam ***(Attach completed form - Form 11)***

   ☐ Sedimentation Basin

   ☐ Other *(describe)*: _____

   _____

   _____

2. Have the impacts and the design and maintenance requirements of the structural measures been reviewed and approved by all impacted communities and by state and local agencies that have jurisdiction over flood control activities? ☐ Yes ☐ No

3. **Attach copies of letters stating communities' and agencies' approval. Letters Attached? ☐ Yes ☐ No ☐ N/A**

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

4. HYDROLOGIC AND SEDIMENT ANALYSES

1. 100-year (base flood) discharge at the apex: Peak Flow _____ cfs

2. Is the base flood apex discharge that is listed above, the discharge presented in the effective FIS? ☐ Yes ☐ No

If No, submit the following:

a. Attach a plot of the flood frequency curve on log-normal probability paper and include the name of the flooding source and the drainage area above the apex, and the mean, standard deviation, and skew coefficient of the curve.

b. Attach the Hydrologic Analysis Form.

3. Sediment load associated with the base flood apex discharge:

Peak Flow _____ cfs

Volume _____ acre-feet

Attach an explanation of the method used to estimate sediment load and attach all calculations.

Explanation attached ☐ **Yes** ☐ **No**

4. Debris load associated with the base flood apex discharge:

Peak Flow _____ cfs

Volume _____ acre-feet

Attach an explanation of the method used to estimate debris load and attach all calculations.

Explanation attached ☐ **Yes** ☐ **No**

4. HYDROLOGIC AND SEDIMENT ANALYSES (Cont'd)

5. List the bulking factor, if any, used for this project: _____

6. Complete the following for potential adverse conditions (such as deforestation of the watershed by fire):

base flood discharge at the apex	Peak Flow _____ cfs
	Volume _____ acre-feet
Sediment load associated with the base flood discharge	Peak Flow _____ cfs
	Volume _____ acre-feet
Debris load associated with the base flood discharge	Peak Flow _____ cfs
	Volume _____ acre-feet

Attach all supporting calculations. Supporting Calculations Attached? ☐ **Yes** ☐ **No** ☐ **N/A**

7. **Attach engineering analyses which demonstrate that flooding (including local runoff) from sources other than the apex is insignificant or has been accounted for in the design.**

Analyses Attached? ☐ **Yes** ☐ **No** ☐ **N/A**

5. STRUCTURAL ANALYSES

For channelization and/or levee/floodwall projects, answer the following:

1. Do the constructed or proposed structural measures provide protection from hazards associated with the possible relocation of flow paths from other parts of the fans? ☐ Yes ☐ No

2. Do the constructed or proposed structural measures affect flood hazards (including depth, velocity, scour, and sediment deposition) on other areas of the fans? ☐ Yes ☐ No

Attach an explanation of the methodology used to assess the impact.

Explanation attached ☐ **Yes** ☐ **No**

Note: Attach detailed engineering analyses to support answers if not included as part of completion of other forms.

FEDERAL EMERGENCY MANAGEMENT AGENCY

MITIGATION DIRECTORATE
TECHNICAL SERVICES DIVISION

AMENDMENTS AND REVISIONS TO

NATIONAL FLOOD INSURANCE PROGRAM MAPS

Application/Certification Forms and Instructions

For

Letters of Map Amendment,
Conditional Letters of Map Amendment,
Letters of Map Revision (Based on Fill), and
Conditional Letters of Map Revision (Based on Fill)

APPLICATION/CERTIFICATION FORMS FOR CONDITIONAL AND FINAL LETTERS OF MAP AMENDMENT AND LETTERS OF MAP REVISION BASED ON FILL

General Background Information

In 1968, the U.S. Congress passed the National Flood Insurance Act, which created the National Flood Insurance Program (NFIP). The NFIP was designed to reduce future flood losses through local floodplain management and to provide protection for property owners against potential losses through an insurance mechanism that allows a premium to be paid for the protection by those most in need of it. Creation of the NFIP represented a major shift in Federal strategy from previous structural flood-control and disaster relief programs.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt floodplain management ordinances containing certain minimum requirements intended to reduce future flood losses. Therefore, the community official or agency responsible for floodplain management may be able to provide information that would be useful to a requester. This official or agency usually is responsible for engineering, public works, flood control, or planning in the community as well.

Use of Application/Certification Forms

The Federal Emergency Management Agency (FEMA) implemented the use of application/certification forms for requesting revisions or amendments to NFIP maps for two reasons. First, because the forms provide a step-by-step process for requesters to follow and are comprehensive, requesters are assured of providing all of the necessary information to support their requests without having to go through an iterative process of providing additional information in a piecemeal fashion. Experience has shown this to be a time-consuming and cost-intensive process. Second, because use of the forms assures that the requesters' submissions are complete and more logically structured, FEMA can complete its review in a shorter timeframe.

The application/certification forms included in this package were designed to assist requesters (community officials, individual property owners, and others) in gathering the information FEMA needs to determine whether property (parcel(s) of land or structure(s)) is likely to be flooded during the flood event that has a 1% chance of being equaled or exceeded in any given year (base flood). Lands that are at risk of being inundated by the base flood are called Special Flood Hazard Areas (SFHAs).

The forms in this package shall be used to request Letters of Map Amendment (LOMAs), Conditional Letters of Map Amendment (CLOMAs), Letters of Map Revision Based on Fill (LOMR-Fs), and Conditional Letters of Map Revision Based on Fill (CLOMR-Fs), as defined below. Please note that not all of the forms apply to every request. Only those forms that apply to the request should be submitted.

LOMA	A letter from FEMA stating that an existing structure or parcel of land that has not been elevated by fill would not be inundated by the base flood.
CLOMA	A letter from FEMA stating that a proposed structure that is not to be elevated by fill would not be inundated by the base flood if built as proposed.
LOMR-F	A letter from FEMA stating that an existing structure or parcel of land that has been elevated by fill would not be inundated by the base flood.
CLOMR-F	A letter from FEMA stating that a parcel of land or proposed structure that is to be elevated by fill would not be inundated by the base flood if fill is placed on the parcel as proposed or the structure is built as proposed.

If the request is being made by an individual property owner to remove a single residential structure or a single legally recorded parcel of land or portion thereof from a designated SFHA, via a LOMA or LOMR-F, the MT-EZ Form, entitled "Application Form for Single Residential Lot or Structure, Amendments and Revisions to National Flood Insurance Program Maps," may be used instead of the forms in this package. The data required to support LOMA, CLOMA, LOMR-F, and CLOMR-F requests are the same, regardless of which application/certification forms package is used.

The forms in this package and the form entitled "Application Form for Single Residential Lot or Structure, Amendments and Revisions to National Flood Insurance Program Maps," **shall not be used** in the following instances:

- Requests involving changes in Base (1% annual chance) Flood Elevations (BFEs);
- Requests involving changes in regulatory floodway boundary delineations;
- Requests for properties in alluvial fan areas;
- Requests involving property and/or structures that have been elevated by fill placed within a regulatory floodway, channelization projects, or bridge/culvert replacement projects; or
- Requests involving changes in coastal high hazard areas (V zones).

For such requests, the community must submit the request to FEMA in accordance with Part 65 of the NFIP regulations using the separately published MT-2 application/certification forms package entitled "Application/Certification Forms and Instructions for Conditional Letters of Map Revision, Letters of Map Revision, and Physical Map Revisions."

Please note that the forms in this package may be used for property that has been inadvertently included in a V zone or a regulatory floodway. However, if the property/structure is to be removed from a V zone, it must not be located seaward of the landward toe of the primary frontal dune.

Data Submission Requirements

In accordance with the NFIP regulations, FEMA will use the information provided by these application/certification forms to make a determination on whether to remove a parcel of property or a structure from a designated SFHA. In certain instances, additional data that are not referenced on these forms may be required. A FEMA representative will notify the requester of any additional requirements.

Applicable Regulations

The regulations pertaining to LOMAs, CLOMAs, LOMR-Fs, and CLOMR-Fs are presented in Parts 65 and 70 of the NFIP regulations, published under Title 44, Chapter 1, Code of Federal Regulations (CFR). The purpose of Part 70 is to provide an administrative procedure whereby FEMA will review information submitted by an owner or lessee of property who believes that his or her property has been inadvertently included in a designated SFHA. The necessity of Part 70 is due in part to the technical difficulty of accurately delineating the SFHA boundaries on an NFIP map. Part 70 procedures shall not apply if the topography has been altered since the effective date of the first NFIP map (i.e., a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map) showing the property to be within the SFHA. Requests involving changes in topography (such as the placement of fill) are handled under the procedures described in Part 65.

Fee Requirements

Part 72 of the NFIP regulations, published at 44 CFR 72, presents information regarding the reimbursement procedure initiated by FEMA to allow for the recovery of costs associated with the review of requests for CLOMAs, CLOMR-Fs, and LOMR-Fs. There are no review and processing fees for LOMAs. The current review and processing fees for such requests, which must be received before the technical review is completed and a determination is issued, are listed below.

Request for single-lot/single-structure CLOMA, CLOMR-F, and LOMR-F	$400
Request for multiple-lot/multiple-structure CLOMA	$700
Request for multiple-lot/multiple-structure CLOMR-F and LOMR-F	$800
Request for single-lot/single-structure LOMR-F based on as-built information (CLOMR-F previously issued by FEMA)	$300
Request for multiple-lot/multiple-structure LOMR-F based on as-built information (CLOMR-F previously issued by FEMA)	$700

Revised fee schedules are published periodically, but no more than once annually, as a notice in the *Federal Register*.

Payment must be submitted in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card payment. Payment should be forwarded to the following address:

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, VA 22116
Fax: (703) 849-0282

Those paying by credit card must complete and submit Form 1A.

Basis of Determination

If no fill has been placed, FEMA's determination as to whether the SFHA designation may be removed from the structure(s) on a property will be based on a comparison of the BFE with the elevation of the lowest adjacent grade to the structure (lowest ground touching the structure) including any attached decks. If fill has been placed, FEMA's determination will be based on a comparison of the BFE with the elevation of the lowest adjacent grade to the structure (lowest ground touching the structure) including any attached decks and with the elevation of the lowest floor (including basement/crawl space).

For FEMA to remove the SFHA designation from a legally defined property that does not have a structure on it, the elevation of the lowest ground on the property must be at or above the BFE.

Please note the following special considerations that may affect FEMA's determination:

- In areas of sheetflow flooding (AO Zones), the elevation of the lowest adjacent grade and the elevation of the lowest floor (including basement/crawl space) of the structure(s) must be elevated above the elevation of the highest surrounding ground by at least the amount of the depth specified on the FIRM. In addition, adequate drainage paths must be maintained to guide floodwaters around and away from the structure(s).

- If the lowest floor of a building has been elevated on posts, piers, or pilings above the BFE and any portion of the structure (i.e., posts, pilings, or piers) is still below the BFE, the building will not be removed from the SFHA.

Response Timeframe

In accordance with Part 70 procedures, FEMA will notify the requester of the determination in writing within 60 days of the date of receipt of all required data. In accordance with Part 65 procedures, FEMA will notify the community of the determination in writing within 90 days of the date of receipt of all required data.

Effect on Insurance Purchase Requirements

Although FEMA may issue a LOMA or LOMR-F removing a structure(s) from the SFHA, it is the lending institution's prerogative to require flood insurance if it deems such action appropriate. If, however, the lending institution agrees to waive the flood insurance purchase requirement for a structure, the property owner is eligible for a full refund of the premium paid for the current policy year, provided that no claim is pending or has been paid on the policy in question during the same policy year. If the property owner has been required to renew his or her policy during a period when a revised NFIP map was being printed, the premium will be refunded for an additional year. To initiate processing of the refund, the property owner should provide the LOMA or LOMR-F and evidence of the waiver of the flood insurance requirement from the lending institution to the insurance agent or broker who sold the policy.

Conditional Determinations

To qualify for a CLOMA or CLOMR-F, the proposed project must meet the same criteria as those required for a LOMA or LOMR-F. After construction is completed or fill is placed, certified as-built information must be submitted to FEMA for a LOMA or LOMR-F to be issued. The NFIP regulations do not require that a CLOMA or CLOMR-F be requested and issued for a proposed project.

Property owners and developers should note that a CLOMA or CLOMR-F merely provides comment on the proposed plan and does not amend the NFIP map. It also does not relieve Federal agencies of the need to comply in carrying out their responsibilities for providing federally undertaken, financed, or assisted construction and improvements or in their regulating and licensing activities, in accordance with the provisions of Executive Order 11988.

Addresses for Submitting Requests

Please submit all application/certification forms and data to support a request to remove a structure(s) or lot(s) from the floodplain to the appropriate address listed below.

REGIONS I-V

(States east of the Mississippi River, including Minnesota)

FEMA
LOMA Depot
P.O. Box 2210
Merrifield, Virginia 22116-2210

REGIONS VI-X

(States west of the Mississippi River, including Louisiana)

FEMA
LOMA Depot
3601 Eisenhower Avenue
Suite 600
Alexandria, Virginia 22304
Attn: LOMA Manager

INSTRUCTIONS FOR COMPLETING THE PROPERTY INFORMATION FORM

General Instructions

The Property Information Form (Form 1) may be completed by the property owner, registered land surveyor, or registered professional engineer. **To ensure a timely response to each submittal, the individual completing this form should review the form carefully to ensure all questions have been answered and all required information has been submitted. To assist in this effort, passages discussing required information have been highlighted in [bold type/red ink] on the form.**

Before completing the Property Information Form (Form 1), the requester must obtain one of the following documents from the County Clerk, Recorder, or Register for the community:

- A copy of the Plat Map for the property, showing the recordation information (e.g., Book/Volume and Page numbers or Document/Instrument number) and containing the recorder's seal and recordation date.

- A copy of the Deed for the property, showing the recordation information (e.g., Book/Volume and Page numbers or Document/Instrument number containing the recorder's seal and recordation date), accompanied by a tax assessor's or other suitable map showing the surveyed location of the property.

The requester also must obtain a photocopy of the effective FIRM panel (including the Title Block) that shows the area in which the property is located. To determine which panel shows the property, the requester should consult the FIRM Index, which shows the outline of the mapped community and the numbers and layout of the individual FIRM panels. After locating the general area of the property by referring to major streets and streams in the vicinity, read the corresponding FIRM panel number from the Index. The FIRM should be available at the community map repository or from the community official or agency responsible for floodplain management. However, the FIRM Index and FIRM panels may be ordered from the Map Service Center for a nominal fee by calling 1-800-358-9616. Orders may also be faxed to the Map Service Center at 1-800-358-9620.

Requesters should note that for multiple structure/lot requests, this form should only be completed once to describe the entire project. One form for each lot is not necessary.

Specific Instructions

Item 1

Provide the Community Name/County Name/State, Panel or Map Number, and Effective Date as they appear in the Title Block of the FIRM panel, as shown in Figure 1 (for maps depicting a single community) or Figure 2 (for maps covering an entire county, including all incorporated communities).

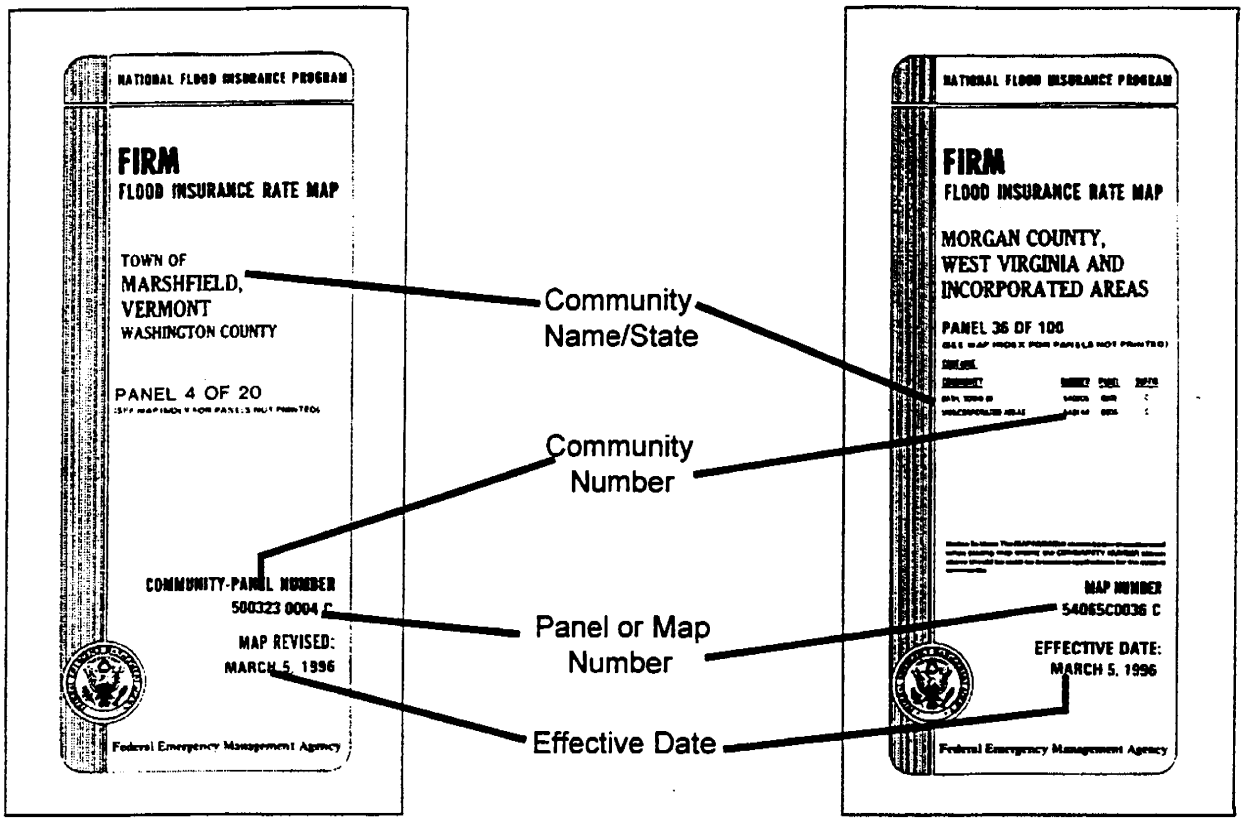


Figure 1. Sample FIRM Panel (Single Community)

Figure 2. Sample FIRM Panel (Countywide)

Item 2

Enter the street address if there is one. For requests involving multiple lots or structures, attach a separate piece of paper when space is insufficient.

Item 3

If a street address cannot be provided, describe the property by referring to the Deed or Plat Map. The description may consist of a lot number and subdivision name, a parcel number, a tract number, or any other information provided in a Deed to identify the property. It is not necessary to reproduce a lengthy description of the property as it appears in the Deed.

Item 4

Answer "a" if the SFHA designation is to be removed from the entire legally defined property shown on the Plat Map or described in the Deed. For the SFHA designation to be removed, the entire parcel as defined must be at or above the BFE.

Answer "b" if the request is **not** for the entire property shown on the Plat Map or described in the Deed, but only for a portion of that property. In this case, a licensed land surveyor or registered professional engineer must write and certify a metes and bounds description of the subject portion. The description must be accompanied by a map showing the accurately plotted metes and bounds of that portion of the property. This map must be certified by a licensed surveyor or registered professional engineer.

Answer "c" if **only** the structure(s) on the property, not the entire property itself, is to be removed from the SFHA.

Item 5

Answer "a" if the request is for a single structure.

Answer "b" if the request is for a single lot.

Answer "c" if the request is for multiple structures.

Answer "d" if the request is for multiple lots.

Item 8

Answer "a" if the request involves structures for which construction is complete ("as-built"), on-grade slabs have been poured, or locations have been recorded.

Answer "b" if the request involves planned placement of fill, planned construction of insurable buildings, or planned improvements costing 50 percent or more of the market value of the structure before the start of construction of the improvement for which lot locations have not been recorded.

Item 9

Answer "yes" if fill has been placed to elevate the structure(s); answer "no" if fill has not been placed.

Fill is defined as material placed to raise the ground to or above the BFE. The common construction practice of removing unsuitable existing material (topsoil) and backfilling with select structural material is not considered the placement of fill if the practice does not alter the existing elevation, which is at or above the BFE. Also, fill that is placed before the date of the first NFIP map showing the area in a SFHA is considered natural ground.

Item 10

Answer this question for proposed projects only. Answer "yes" if fill will be placed to elevate the property (land or structure(s)) to or above the BFE; answer "no" if fill is not anticipated. For "yes" answers, indicate month and year when fill will be placed.

Item 11

Provide any readily available information regarding previous requests to FEMA for determinations in this area. In particular, if the request concerns a proposed project that was submitted to FEMA for comment and is now complete, please indicate that here and provide the date of FEMA's response. It is **not** necessary to research previous requests.

Indicate all documents that are enclosed with this request. The documents to be enclosed with each request will vary, depending on the nature of the request. Not all forms are required for every request. Please review the information below to determine what documentation is required.

Item 12

a. Property description documentation must be enclosed for every request and will consist of either the Plat Map (containing the recorder's stamp and recordation date) accompanied by a tax assessor's map or other suitable map showing the surveyed location of the property. The recordation data (e.g., Book, Volume, Page, Reel, Document Number, Date) must be evident on the copies of these documents so that FEMA may use the legal description of the property. In addition, FEMA must be able to identify the property exactly. If the property is not recorded on a Plat Map, a copy of a tax assessor's map or other suitable map must be submitted to aid FEMA in locating the property.

b. Property description documentation must be enclosed for every request and will consist of either the Deed (containing the recorder's stamp and recordation date) accompanied by a tax assessor's map or other suitable map showing the surveyed location of the property. The recordation data (e.g., Book, Volume, Page, Reel, Document Number, Date) must be evident on the copies of these documents so that FEMA may use the legal description of the property. In addition, FEMA must be able to identify the property exactly. If the property is not recorded on a Plat Map, a copy of a tax assessor's map or other suitable map must be submitted to aid FEMA in locating the property.

c. A photocopy of the effective FIRM panel, annotated to show where the property is located, must be submitted for every request. For requests involving multiple structures or lots, the locations of the structures or lots must be certified by a licensed land surveyor or registered professional engineer to be accurate representations. The panel number and effective date of the FIRM must appear on the copy submitted. The actual map or a photographic copy must be used. A reproduction from a photocopy is unacceptable due to possible distortion.

d. If the ground elevations are not clearly documented on the Elevation Information Form (Form 2), then a map certified by a registered professional engineer or licensed land surveyor must be submitted to relate the ground elevations and locations of structures or lots. The map must be labeled to indicate whether it reflects "as-built" or "proposed" conditions.

e. A metes and bounds description must be submitted for requests that involve the removal of only a portion of the entire property from the SFHA. (This does not apply to requests involving only structures.) The metes and bounds description must cover the specific area to be removed, it must be tied to an identifiable starting point, and it must be certified by a licensed land surveyor or registered professional engineer. The narrative description must be accompanied by a certified map showing the area described. No portion of the area described by the metes and bounds may be below the BFE.

f. The Elevation Information Form (Form 2) must be included for all requests, except requests for determinations in which the FIRM already shows property to be CLEARLY outside the SFHA. For cases in which the determination for the property or structure is uncertain, elevation data must be submitted to provide a definitive determination. This form must be completed by a licensed land surveyor or registered professional engineer. If an Elevation Certificate has been completed for a structure(s), it may be submitted in lieu of this form. The Elevation Certificate must be certified by a licensed land surveyor or registered professional engineer.

g. The Community Acknowledgment of Requests Involving Fill Form (Form 4) must be submitted for all requests involving the placement of fill in the SFHA to elevate property (parcel(s) or structure(s)). The form requires the Chief Executive Officer (CEO) of the community or an official designated by the CEO to acknowledge activities affecting the community's floodplain and floodway management responsibilities.

h. The Certification of Fill Placement Form (Form 3) must be submitted for requests involving the preparation of fill pads designed to support the foundations of structures. It must be completed by a registered professional engineer, an accredited soils scientist, or the community's NFIP permit official. This certification is **not** required for a single **residential** structure.

i. Specify and attach other information that is necessary for FEMA to make a determination on the request.

Item 13

The appropriate review and processing fee must be submitted for requests involving proposed projects and for requests involving the placement of fill. No fee is required to obtain a determination based on existing conditions (i.e., a LOMA) as long as no fill has been placed. Refer to page 2 of this application/certification forms package for assistance in determining the appropriate fee.

Item 14

Provide complete name, address, and telephone number of applicant. Provide signature where indicated to certify the accuracy of the information provided in, and submitted with, the form. Please add the date on which the form has been completed.

INSTRUCTIONS FOR COMPLETING THE CREDIT CARD INFORMATION FORM

If the revision request involves a fee, the option of paying with a credit card is available. Accepted credit cards include Visa, and Mastercard. Please include the case number if known and clearly print all information.

INSTRUCTIONS FOR COMPLETING THE ELEVATION INFORMATION FORM

General Instructions

The Elevation Information Form (Form 2) must be completed by a licensed land surveyor or registered professional engineer. **To ensure a timely response to each submittal, the individual completing this form should review the form carefully to ensure all questions have been answered and all required information has been submitted. To assist in this effort, passages discussing required information have been highlighted in [bold type/red ink] on the form.**

For a licensed land surveyor or registered professional engineer to complete this form, it will be necessary to obtain the effective FIRM panel, effective Flood Boundary and Floodway Map (FBFM) panel (if printed), and Flood Insurance Study (FIS) report that cover the area in which the property is located. These can be obtained from the community map repository or can be ordered from the Map Service Center for a nominal fee by calling 1-800-358-9616. Orders may also be faxed to the Map Service Center at 1-800-358-9620.

For multiple-lot or multiple-structure requests, this form should be completed only once, and submitted with a complete Summary of Elevations-Individual Lot Breakdown Form (Form 5) showing the appropriate elevations for each lot.

Item 1

Provide the community name as it appears in the Title Block of the FIRM panel that shows the area in which the property is located.

Item 2

Provide lot/block numbers and subdivision name, street address, or tract/parcel number.

Item 3

Provide the name the source of the flooding (i.e., give the name of the stream, river, lake, bay, or ocean) as it appears on the FIRM or note whether there is ponding or shallow flooding.

Item 4

List all flood insurance risk zones shown on the FIRM that affect the property (e.g., A, AE, A1-A30, A99, AO, AH, VE, V1-V30, B, C, X, D).

Item 5

The regulatory floodway is the channel of a river or other watercourse that must be reserved to carry the floodwaters efficiently. If a floodway has been adopted by the community, it will be shown on the FBFM or FIRM. No fill may be placed in a regulatory floodway.

Answer "yes" if the area of the property is in the regulatory floodway; answer "no" if no portion of the property is in the regulatory floodway.

Answer "yes" if existing/planned structure(s) is/will be in the regulatory floodway; answer "no" if no structure(s) is/will be in the regulatory floodway.

Item 6

Answer "yes" if the area of the property is in an area of subsidence or uplift; answer "no" if the area of the property is not in an area of subsidence or uplift.

In areas of subsidence or uplift, the elevations shown on this document must be based on the most recent releveling of a National Geodetic Survey or other acceptable benchmark. This is required to ensure that the determination is based on a proper comparison between the published BFE and the ground elevation.

Items 7 and 8

List the elevation to the nearest 0.1 foot and identify the datum to which the elevation is referenced (e.g., NGVD, NAVD, MSL). Preliminary data produced while a FEMA study/restudy is underway cannot be used to support a request for a LOMA, CLOMA, LOMR-F, or CLOMR-F. Elevations presented should be referenced to the same datum shown on the FIRM and in the FIS report. Use the information below as guidance.

Detailed Analysis

A determination of the 1% annual chance water-surface elevation shall be made using the BFE or depth presented in the FIS report (in the "Summary of Elevations" table or on the Flood Profiles). If this FIS report information does not exist, then provide the one that is shown on the FIRM. (Elevations shown on the FIRM are rounded to the nearest whole foot.) Requests based on flood elevations or depths that are different from those shown on the FIRM or in the FIS report may be processed under other administrative procedures.

Zone AE or A1-A30 (riverine flooding): After locating the property on the FIRM or FBFM, use the nearest lettered cross section or physical feature to locate the property and the corresponding BFE on the Flood Profile in the FIS report.

Zone AE or A1-A30 (coastal flooding): Obtain the BFE from the FIRM panel and compare it to the corresponding value presented in the "Summary of Stillwater Elevations" table in the FIS report. If the table value is within 0.4 foot of the BFE on the FIRM (i.e., no wave runup), use the table value; if the BFE on the FIRM is more than 0.5 foot greater than the table value (i.e., includes wave runup), use the BFE on the FIRM.

Zone AH or A1-A30 (shallow flooding): Obtain the BFE from the FIRM panel or FIS report if there is no Flood Profile.

Zone AO (shallow flooding): Obtain the depth from the FIRM panel.

Zone VE or V1-V30 (Coastal High Hazard Zone): Obtain the BFE from the FIRM panel and compare it to the corresponding value presented in the "Summary of Stillwater Elevations" table in the FIS report. If the table value is within 0.4 foot of the BFE on the FIRM (i.e., no wave runup), use the table value; if the BFE on the FIRM is more than 0.5 foot greater than the table value (i.e., includes wave runup), use the BFE on the FIRM. If a property/structure is to be removed from a Zone VE or V1-V30, it must not be located seaward of the landward toe of the primary frontal dune.

Approximate Analysis

If FEMA has not specified BFEs for the area, data may be provided to substantiate a BFE for the property in question. These data may be obtained from an authoritative source, such as the U.S. Army Corps of Engineers, U.S. Geological Survey, U.S. Soil Conservation Service, or a State or local water resource department. Alternatively, data prepared and certified by a registered professional engineer may be submitted. Sufficient technical information should be provided to support the elevation, and must include Form 3, Hydrologic Analysis Form, and Form 4, Riverine Hydraulic Analysis Form, from the previously referenced MT-2 application/certification forms package.

Item 9

List the elevation and identify the datum to which the elevation is referenced only for requests to remove the SFHA designation from one or more parcel(s) of land.

Item 10

List the elevation and identify the datum to which the elevation is referenced only for requests to remove the SFHA designation from one or more structures. The required elevation is that of the lowest ground touching the structure including any attached decks. For structures built on posts, piers, or pilings, the elevation of the lowest ground touching the posts, piers, or pilings must be submitted.

Item 11

List the elevation and identify the datum to which the elevation is referenced only for requests involving fill placed within an identified SFHA to elevate structure(s) since the date of the first NFIP map showing the area of the structure in the SFHA. If a basement/crawl space exists, the required elevation is that of the basement/crawl space floor.

Item 12

Requesters should also indicate whether the elevation is for a structure that is proposed or existing. Answer "a" if the elevation is for a proposed structure. Answer "b" is the elevation is for an existing structure.

Item 13

Identify the conversion factor to convert the elevation data submitted in support of the request to the effective FIS datum.

Item 14

Answer "yes" if a completed copy of the Summary of Elevations-Individual Lot Breakdown Form (Form 5) and a map certified by a licensed land surveyor or registered professional engineer have been included with the request; answer "no" and provide a brief explanation if the request if for multiple lots and/or structures and the form and map have not been provided.

Item 15

Provide all requested information to certify the accuracy of the information provided in and with this form. If FEMA has specified a BFE for the area in which the property is located or the elevation was obtained from an authoritative source, the form may be certified by either a registered professional engineer or a licensed land surveyor. If FEMA has not specified a BFE for the area and a registered professional engineer has determined the elevation based on alternative data, Items 7 and 8 must be certified by a registered professional engineer, but the form may be certified by either a registered professional engineer or a licensed land surveyor.

INSTRUCTIONS FOR COMPLETING OPTIONAL FORMS

General

While Forms 1 and 2 must be completed for all requests, Forms 3, 4, and 5 must only be completed when they are applicable. Instructions for completing each of these forms are provided below.

Certification of Fill Compaction Form

The Certification of Fill Compaction Form (Form 3) must be completed for all requests involving the placement of fill, existing or proposed, except those involving single residential structures. This form must be completed and signed by a registered professional engineer or soils engineer, or by the community's NFIP permit official. The community name and the subject property address shown in Items 1 and 2 of the Property Information Form must appear in the spaces provided. All sections of the form must be completed and signed.

Community Acknowledgment of Requests Involving Fill Form

The Community Acknowledgment of Requests Involving Fill Form (Form 4) must be completed for all requests involving the placement of fill existing or proposed. The form must be completed and signed by the official responsible for floodplain management in the community. The community name and the subject property address shown in Items 1 and 2 of the Property Information Form must appear in the spaces provided.

Summary of Elevations—Individual Lot Breakdown Form

The Summary of Elevations—Individual Lot Breakdown Form (Form 5) must be completed for requests involving multiple lots and/or multiple structures. The form must be completed and signed by a licensed land surveyor or registered professional engineer. In completing the form, the licensed land surveyor or registered professional engineer should note the following:

1. The community name and the subject property address shown in Items 1 and 2 of the Property Information Form must appear in the spaces provided.

2. Elevations for each lot or structure must be provided.

3. The lowest lot elevation must be provided for any request to remove the SFHA designation from an entire parcel of land.

4. The lowest floor elevation (including basements/crawl spaces) must be provided for any request to remove the SFHA designation from structures that have been elevated by the placement of fill.

5. The elevation of the lowest adjacent grade (including any attached decks) of the structures must be provided for ALL requests to remove the SFHA designation from structures.

For requests involving structures, the requester should indicate whether the elevation provided is for an existing structure or a proposed structure by adding "(E)" or "(P)" after the elevation.

FEDERAL EMERGENCY MANAGEMENT AGENCY **PROPERTY INFORMATION**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1.63 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form may be completed by the property owner, registered land surveyor, or registered professional engineer

1. Community Name of NFIP map panel on which the property is located:

   _____ County: _____ State: _____

   Panel or Map Number: _____

   Effective Date: _____

2. Street Address of Property: _____

3. Description of Property Lot and Block (if a street address cannot be provided):

   _____

   _____

   _____

4. Are you requesting that the SFHA designation be removed from (a) all of the land within the bounds of the property, (b) a portion of land within the bounds of the property (*a certified metes and bounds description of the area to be removed is required*), or (c) the structure(s) on the property? *(Answer "a," "b," or "c")* _____

5. Is this request for (a) a single structure, (b) a single lot, (c) multiple structures, (d) multiple lots? *(Answer "a," "b," "c" or "d")* _____

6. What is the type of construction? (a) crawl space; (b) slab on grade; (c) basement; (d) other (explain). *(Answer "a," b." "c," or "d")* _____

7. Is this request prior to the transfer of ownership of the property in question from a developer to an individual property owner?
   ☐ Yes ☐ No

8. Is this request for (a) existing conditions, or (b) proposed project? *(Answer "a" or "b")* _____

9. Has fill been placed on the property to elevate the ground elevation of the property, to elevate a structure(s), or to elevate the ground elevations around a structure? _____ If yes, when? _____

10. For proposed projects, will fill be placed to elevate this land or structure? _____

11. If known, list the case number and/or the street address of previous requests that have been submitted to FEMA for this property or adjacent properties? _____

    _____

12. One of the following documents is required of all cases:

    I have enclosed the following documents in support of this request:

    ☐ a. Copy of the Subdivision Plat Map *(with recordation data and stamp of the Recorder's Office)*

    OR

    ☐ b. Copy of the property Deed *(with recordation data and stamp of the Recorder's Office)*, accompanied by a tax assessor's map or other suitable map showing the surveyed location of the property with respect to local streets and watercourses.

    (For these maps a map scale must be provided and they should not be reduced or enlarged.)

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

The following documents should be enclosed as applicable:

☐ c. Copy of the effective FIRM panel on which the property location has been accurately plotted *(if the request is for mo than one lot/structure, this location must be certified by a licensed land surveyor or registered professional engineer)*

☐ d. A map showing the location of any structures existing on or proposed for the property *(certified by a licensed land surveyor or registered professional engineer)*

☐ e. Metes and bounds description and accompanying map of the portion of the property to be removed from the SFHA (certified by a licensed land surveyor or registered professional engineer) (only if the request is for a portion of land within the bounds of the property, not the entire lot or the structure(s) only)

☐ f. Form 2 Elevation Information form or A FEMA NFIP Elevation Certificate may be submitted in lieu of the Elevation Information form (for structures/property located in Zone AO see instructions for further guidance.)

☐ g. Form 4 Community Acknowledgment form *(only if fill has been or will be placed)*

☐ h. Form 3 Certification of Fill Compaction form *(only if fill has been or will be placed and the request is not for an existing single residential structure)*

☐ i. Additional information: _____
please specify

13. **PAYMENT ENCLOSED**

☐ Processing fee (see instructions for processing fees and exemptions)

_____ $_____
(Type of request) (amount enclosed)

Check or money order only. Make check or money order payable to: **National Flood Insurance Program**. If paying Visa or Mastercard, please complete and submit the Credit Card Information Form (Form 1A), which follows this form.

14. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Applicant's Name: _____ Company: _____
(please print or type)

Mailing Address: _____
(please print or type)

_____

Daytime Telephone Number: _____ Fax Number: _____

_____ _____
Date Signature of Applicant (required)

FEDERAL EMERGENCY MANAGEMENT AGENCY **CREDIT CARD INFORMATION**	O.M.B. Burden No. 3067-0147 Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 6 minutes per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

If paying by credit card, this form must be completed. **THIS FORM SHOULD NOT BE INCLUDED WITH THE REST OF THE FORMS PACKAGE. IT MUST BE MAILED OR FAXED TO:**

Federal Emergency Management Agency
Revisions Fee-Collection System Administrator
P.O. Box 3173
Merrifield, Virginia 22116
Fax: (703) 849-0282

Case # _____(if known) Amount: $_____

☐ FEE ☐ ADDITIONAL FEE ☐ INVOICE

☐ VISA ☐ MASTERCARD

CARD NUMBER: _____

EXPIRATION DATE: _____

_____
Signature

NAME (AS IT APPEARS ON CARD): _____
(please print)

ADDRESS: _____
(for your credit card receipt- please print) _____

DAYTIME PHONE: _____

NOTICE: A COPY OF FORM 1, BEING SUBMITTED FOR THIS REQUEST MUST BE ATTACHED TO THIS FORM.

FEDERAL EMERGENCY MANAGEMENT AGENCY **ELEVATION INFORMATION**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 0.63 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collection Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

This form must be completed by a registered professional engineer or licensed land surveyor. These forms should not be used for requests involving Channelization, Bridges/Culverts, or Fill in the FEMA-Designated (regulatory) Floodway; instead, forms entitled Revisions to National Flood Insurance Program Maps (MT-2) should be used. The Elevation Information Form must be included for all requests, unless the request is for a determination in which the FIRM already shows the property to be CLEARLY outside the SFHA. Cases in which the determination for the property or structure is uncertain will require the submittal of elevation data to provide a definitive determination. If an Elevation Certificate has been completed for the subject property, it may be submitted in lieu of this form.

(See instructions for details)

1. Community Name: _____

2. Legal Description of Property: _____

_____

3. Flooding Source: _____

4. Based on the FIRM, this property is located in Zone(s): _____

5. Is any portion of this property located in the regulatory floodway? ☐ Yes ☐ No

Are any structures (*existing or proposed*) located in the regulatory floodway? ☐ Yes ☐ No

6. Is this area subject to land subsidence or uplift? ☐ Yes ☐ No
If yes, what is the date of the current releveling? _____

For items 7-11 multiple lots/structures, complete the appropriate column(s) of the Summary of Elevations - Individual Lot Breakdown form, identifying the elevation for each lot/structure. To support items 9, 10, and 11, please note a map (certified by a licensed surveyor or registered professional engineer) may be required to relate the ground elevations and locations of structures or lots. The map should indicate whether it reflects "as-built" or "proposed" conditions.

7. What is the BFE for this property? (*Provide elevation to nearest tenth of a foot and datum)*

_____ Elevation _____ Datum (NGVD, NAVD or other)

8. How was the BFE determined? (*attach a copy of the Flood Profile or table from the FIS report, if appropriate, a copy of a letter from a state agency establishing a BFE, or other necessary supporting information including Forms 3 and 4 from forms entitled, "Revisions to National Flood Insurance Program Maps" (MT-2)).*

_____

_____

_____

9. If this request is to remove the SFHA designation from a parcel of land or lot(s), what is the existing or proposed elevation of the lowest grade; that is, the lowest ground on the property or within the metes and bounds description of the portion being removed? (Provide elevation to nearest tenth of a foot and datum)
_____ Elevation _____ Datum

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

10. If this request is to remove the SFHA designation from a structure(s), what is the elevation of the existing or proposed lowest adjacent grade; that is, the lowest ground touching the structure, including any attached decks or garage? (Provide elevation to nearest tenth of a foot and datum) _____ Elevation _____ Datum

11. If fill has been/will be placed to elevate the structure(s) on this property, what is the existing or proposed elevation of the lowest floor, including basement, and/or attached garage? (Provide elevation to nearest tenth of a foot and datum)
_____ Elevation _____ Datum

12. Are the measurements in items 9 - 11 based on (a) proposed or (b) existing conditions? _____

13. If any of the above elevations were computed based on a datum different than the effective FIS, what is the conversion factor?
FIS Datum = Local Datum +/- _____ feet

14. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name (please print or type): _____

Title (please print or type): _____

Registration No.: _____ Expiration Date: _____

State: _____

Telephone Number: _____

_____
Signature

_____ _____
Date Seal (Optional)

FEDERAL EMERGENCY MANAGEMENT AGENCY **CERTIFICATION OF FILL PLACEMENT**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .35 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Se comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collectic Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name _____ Property Name or Address _____

The Fill is: ☐ Existing ☐ Proposed

I hereby certify that fill placed on the property to raise the ground surface to or above the base flood elevation in order to gain exclusion from a Special Flood Hazard Area meets the criteria of Title 44 of the Code of Federal Regulations, Section 65.5(a)(6), listed below. For proposed fill, I hereby certify that it is designed in accordance with these criteria. *Please note* Both Section 1 and Section 2 must be certified; however, different individuals may certify them.

SECTION 1

1. The fill has been compacted to 95 percent of the maximum density obtainable with the Standard Proctor Test method or an acceptable equivalent method for *(check one of the following)*:

   ☐ a. Fill pads prepared for the foundations of residential or commercial structures

   ☐ b. Entire legally defined parcel *(Note: if the location of fill pads has not been determined, the fill over the entire legally defined parcel must be compacted to the above criteria)*.

Name (please print or type): _____

_____
Signature

_____ _____
Date Community Official's Title or
Engineer's Seal/Registration Number

SECTION 2

2. Fill slopes for granular materials are not steeper than one vertical on one-and-one-half horizontal *(steeper slopes must be justified)*; and

3. Adequate erosion protection is provided for fill slopes exposed to moving flood waters *(slopes exposed to flows with velocities of up to 5 feet per second (fps) during the base flood must, at a minimum, be protected by a permanent cover of grass, vines, weeds, or similar vegetation; slopes exposed to flows with velocities greater than 5 fps during the base flood must, at a minimum, be protected by appropriately designed stone, rock, concrete, or other durable products)*.

Name (please print or type): _____

_____
Signature

_____ _____
Date Community Official's Title or
Engineer's Seal/Registration Number

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

FEDERAL EMERGENCY MANAGEMENT AGENCY **COMMUNITY ACKNOWLEDGMENT OF REQUESTS INVOLVING FILL**	O.M.B. Burden No. 3067-0147 Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average .88 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0148), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Property Name or Address: _____

We hereby acknowledge receipt and review of this Letter of Map Revision (Based on Fill) request and have found that the completed or proposed project meets or is designed to meet all of the community's applicable floodplain management regulations, including the requirement that no fill be placed in the regulatory floodway. We understand that this request is being forwarded to FEMA for a possible map revision. For proposed projects, we understand that FEMA is being asked to provide comments on the potential effects of this project on the flood hazards of our community.

Community comments on the proposed project:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Community Official's Name (please print or type): _____

Address (please print or type): _____

_____

Daytime Telephone Number: _____

_____ _____

Community Official's Signature Date

PLEASE REFER TO THE INSTRUCTIONS FOR THE APPROPRIATE MAILING ADDRESS

FEDERAL EMERGENCY MANAGEMENT AGENCY

SUMMARY OF ELEVATIONS - INDIVIDUAL LOT BREAKDOWN

O.M.B. Burden No. 3067-0147
Expires May 31, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 0.67 hour per response. The burden estimate includes the time for reviewi instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the form. Ser comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, S.W., Washington, DC 20472; and to the Office of Management and Budget, Paperwork Reduction Project (3067-0147), Washington, DC 20503.

You are not required to respond to this collection of information unless a valid OMB Control Number is displayed in the upper right corner of this form.

Community Name: _____

Property Name or Address: _____

LOT NUMBER	BLOCK NUMBER	LOWEST LOT ELEVATION[1]	LOWEST FLOOR ELEVATION[2]	LOWEST ADJACENT GRADE TO STRUCTURE[3]	BASE (100-YEAR) FLOOD ELEVATION	FOR FEMA USE ONLY

[1]**For requests that an entire parcel of land be removed from the SFHA; if the request involves an area described by metes and bounds, provide the lowest elevation within the metes and bounds description**

[2]**For requests that a structure be removed from the SFHA when fill has been or will be placed on the property, the lowest floor, including basement or garage, must be submitted**

[3]**For requests that a structure be removed from the SFHA, the lowest adjacent grade to the structure, including an attached deck or garage, must be submitted**

FEDERAL EMERGENCY MANAGEMENT AGENCY
APPLICATION FORM FOR SINGLE RESIDENTIAL LOT OR STRUCTURE AMENDMENTS AND REVISIONS TO NATIONAL FLOOD INSURANCE PROGRAM MAPS

O.M.B. No. 3067-0257
Expires April 30, 2001

PUBLIC BURDEN DISCLOSURE NOTICE

This form should be used by an individual property owner to request that the Federal Emergency Management Agency (FEMA) remove a single residential structure or a legally recorded parcel of land or portions thereof, described by metes and bounds certified by a registered professional engineer or licensed land surveyor, from a designated Special Flood Hazard Area (SFHA), an area that would be inundated by the flood having a 1% chance of being equaled or exceeded in any given year (base flood), via Letter of Map Amendment (LOMA) or Letter of Map Revision Based on Fill (LOMR-F). It shall not be used for requests involving changes to base flood elevations, floodway designations, or proposed projects. In addition, it shall not be used for requests submitted by developers or for requests involving multiple structures or lots.

Applicable Regulations

The regulations pertaining to LOMAs and LOMRs-F are presented in the National Flood Insurance Program (NFIP) regulations under Title 44, Chapter I, Parts 65, 70 and 72, Code of Federal Regulations. The purpose of Part 70 is to provide an administrative procedure whereby FEMA will review information submitted by an owner or lessee of property who believes that his or her property has been inadvertently included in a designated SFHA. The necessity of Part 70 is due in part to the technical difficulty of accurately delineating the SFHA boundary on an NFIP map. Part 70 procedures shall not apply if the topography has been altered since the effective date of the first NFIP map (i.e., a Flood Insurance Rate Map (FIRM) or Flood Hazard Boundary Map) showing the property to be within the SFHA. Requests involving changes in topography (such as the placement of fill) are handled under the procedures described in Part 65. In such instances, note especially NFIP regulations Paragraph 65.5.

Basis of Determination

FEMA's determination as to whether a structure or legally recorded parcel of land, or portions thereof, described by metes and bounds, may be removed from the SFHA will be based upon a comparison of the Base (1% annual chance) Flood Elevation (BFE) with certain elevation information. The elevation information required is dependent on whether a structure, a legally recorded parcel of land, or portions thereof are to be removed from the SFHA and whether fill has been placed on the property to raise the structure or parcel of land above the BFE, as outlined below.

Item to be Removed from the SFHA	Elevation Information Required
Structure located on natural ground (LOMA)	Lowest adjacent grade to the structure (the elevation of the lowest ground touching the structure including attached deck)
Structure located on fill (LOMR-F)	Lowest adjacent grade to the structure and the elevation of the lowest floor (including basement/attached garage)
Undeveloped legally recorded parcel of land or portions thereof (LOMA or LOMR-F)	Elevation of the lowest ground on the parcel or within the portion of land to be removed from the SFHA

Please note the following list of some of the special considerations that may affect FEMA's determination:

- Fill is defined as material placed to raise the ground to or above the BFE. Fill placed before the effective date of the first NFIP map showing the property to be within the SFHA is treated as natural ground. If this cannot be determined, then the initial identification date will be used.
- In areas of sheetflow flooding (AO Zones), the FEMA Regional Office should be contacted to clarify the elevation information that will be required for a determination as to whether a structure or a legally defined parcel of land can be removed from the SFHA.
- If the lowest floor of a building has been elevated on posts, piers, or pilings above the BFE in the SFHA and any portion of the structure (i.e., posts or piers) is still below the BFE, the building will not be removed from the SFHA.

Effective March 10, 1997, FEMA revised the fee schedule for reviewing and processing requests for modifications to published flood information and maps. Under this schedule, FEMA established a flat review and processing fee for each type of request. The fee for your LOMR-F request will be $400, or $300 if following a conditional LOMR-F, and must be received before we can begin processing your request. LOMAs are fee exempt. Payment of this fee shall be made in the form of a check or money order, made payable in U.S. funds to the National Flood Insurance Program, or by credit card (please include form 1A of MT-1 forms). The payment must be forwarded to the following address:

Federal Emergency Management Agency
Fee-Collection System Administrator
P.O. Box 3173
Merrifield, VA 22116-3173

If requesting a LOMA, please submit your request to:
(See attached address listing)

If requesting a LOMR-F, please submit your request without payment to:
(See attached address listing)

1. Community Name of NFIP map: _____ Map/Panel Number: _____

2. Street Address of Your Property: _____

3. Has fill been placed on your property? _____ If yes, when? _____

4. Are you requesting that the flood zone designation be removed from a) your entire legally recorded property; b) a portion of your legally recorded property (a metes and bounds description must be written and certified by a registered professional engineer and submitted along with a map showing the metes and bounds area); or c) a structure on your property? (Answer "a," "b," or "c") _____

5. Existing/proposed structures:

   - What is the date of construction? _____
   - What is the type of construction? (a) crawl space; (b) slab on grade; (c) basement; (d) other (explain) (Answer "a," "b," "c," or "d") _____

6. One of the following documents is required of all requests:

☐ a. Copy of Subdivision Plat Map (with recordation data and stamp of the Recorder's Office).

OR

☐ Copy of the Property Deed (with recordation data and stamp of the Recorder's office) accompanied by a tax assessor's map or other suitable map showing the surveyed location of the property with respect to local streets and watercourses. (If the subdivision plat map and property deed are available, then both should be submitted.)

In addition, the following documents should be enclosed as applicable:

☐ b. Copy of the effective Flood Insurance Rate Map panel on which the property location has been accurately plotted

☐ c. Map showing the location of any structures on the property

☐ d. Metes and bounds description and accompanying map (only if the request is for a portion of the property), certified by a registered professional engineer or licensed surveyor

☐ e. A completed Federal Emergency Management Agency, National Flood Insurance Program, Elevation Certificate, certified by a registered professional engineer or licensed surveyor

OR

☐ A completed Elevation Information Form (MT-1, Form 2)

☐ f. Data to substantiate the 1% annual chance (base) flood elevation was not available from an authoritative source (such as a Federal or State agency). Base flood elevations were calculated and the back-up calculations are provided.

☐ g. Community Acknowledgment Form (MT-1, Form 4) (only if fill has been placed—available from regional office or community)

☐ h. If requesting a LOMR-F, the fee has been submitted to the fee collection administrator at the address on the front of this form.

☐ i. Additional information (attach list)

All information submitted becomes property of FEMA; please maintain a copy for your records.

7. All information submitted in support of this request is correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Property Owner's Name: (Please Print) _____

Mailing Address: _____

_____

_____

Daytime Telephone No.: _____

_____ Signature

_____ Date

LOMA AND LOMR-F SUBMITTAL ADDRESSES

REGIONS I-V

(States east of the Mississippi River, including Minnesota)

FEMA
LOMA Depot
P.O. Box 2210
Merrifield, Virginia 22116-2210

REGIONS VI-X

(States west of the Mississippi River, including Louisiana)

FEMA
LOMA Depot
3601 Eisenhower Avenue
Suite 600
Alexandria, Virginia 22304
Attn: LOMA Manager

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

AND

INSTRUCTIONS

NATIONAL FLOOD INSURANCE PROGRAM
ELEVATION CERTIFICATE

PAPERWORK REDUCTION ACT NOTICE

Public reporting burden for the Elevation Certificate is estimated to average 2.25 hours per response. Burden means the time, effort, or financial resources expended by persons to generate, maintain, retain, disclose, or provide information to the Federal Emergency Management Agency (FEMA). You are not required to respond to the collection of information unless a valid OMB control number is displayed in the upper right corner of each form. You may send comments regarding the accuracy of the burden estimate and any suggestions for reducing the burden to Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington, DC 20472, Paperwork Reduction Project (3067-0077). Do not send completed form(s) to the above address. To obtain or retain benefits under the National Flood Insurance Program (NFIP), you must respond to this collection of information.

PURPOSE OF THE ELEVATION CERTIFICATE

The Elevation Certificate is an important administrative tool of the National Flood Insurance Program (NFIP). It is to be used to provide elevation information necessary to ensure compliance with community floodplain management ordinances, to determine the proper insurance premium rate, and to support a request for a Letter of Map Amendment or Revision (LOMA or LOMR-F).

The Elevation Certificate is required in order to properly rate post-FIRM buildings, which are buildings constructed a.. publication of the Flood Insurance Rate Map (FIRM), for flood insurance Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO. The Elevation Certificate is not required for pre-FIRM buildings unless the building is being rated under the optional post-FIRM flood insurance rules.

As part of the agreement for making flood insurance available in a community, the NFIP requires the community to adopt a floodplain management ordinance that specifies minimum requirements for reducing flood losses. One such requirement is that the community obtain the elevation of the lowest floor (including basement) of all new and substantially improved buildings, and maintain a record of such information. The Elevation Certificate provides a way for a community to comply with this requirement.

Use of this certificate does not provide a waiver of the flood insurance purchase requirement. Only a LOMA or LOMR-F from the Federal Emergency Management Agency (FEMA) can amend the FIRM and remove the Federal mandate for a lending institution to require the purchase of flood insurance. However, the lending institution has the option of requiring flood insurance even if a LOMA/LOMR-F has been issued by FEMA. The Elevation Certificate may be used to support a LOMA or LOMR-F request. Lowest floor and lowest adjacent ground elevations certified by a surveyor or engineer will be required if the certificate is used to support a LOMA or LOMR-F request.

This certificate is used only to certify building elevations. A separate certificate is required for floodproofing. Under the NFIP, non-residential buildings can be floodproofed up to or above the Base Flood Elevation (BFE). A floodproofed building is a building that has been designed and constructed to be watertight (substantially impermeable to floodwaters) below the BFE. Floodproofing of residential buildings is not permitted under the NFIP unless FEMA has granted the community an exception for residential floodproofed basements. The community must adopt standards for design and construction of floodproofed basements before FEMA will grant a basement exception. For both floodproofed no sidential buildings and residential floodproofed basements in communities that have been granted an exception by EMA, a floodproofing certificate is required.

NATIONAL FLOOD INSURANCE PROGRAM

ELEVATION CERTIFICATE

Expires July 31, 2002

Important: Read the instructions on pages 1 - 7.

SECTION A - PROPERTY OWNER INFORMATION

For Insurance Company Use.

BUILDING OWNER'S NAME

Policy Number

BUILDING STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. No.) OR P.O. ROUTE AND BOX NO.

Company NAIC Number

CITY STATE ZIP CODE

PROPERTY DESCRIPTION (Lot and Block Numbers, Tax Parcel Number, Legal Description, etc.)

BUILDING USE (e.g., Residential, Non-residential, Addition, Accessory, etc. Use Comments section if necessary.)

LATITUDE/LONGITUDE (OPTIONAL) (##° - ##' - ##.##" or ##.#####°) HORIZONTAL DATUM: ☐ NAD 1927 ☐ NAD 1983 SOURCE: ☐ GPS (Type): ☐ USGS Quad Map ☐ Other:

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

B1. NFIP COMMUNITY NAME & COMMUNITY NUMBER	B2. COUNTY NAME	B3. STATE

B4. MAP AND PANEL NUMBER	B5. SUFFIX	B6. FIRM INDEX DATE	B7. FIRM PANEL EFFECTIVE/REVISED DATE	B8. FLOOD ZONE(S)	B9. BASE FLOOD ELEVATION(S) (Zone AO, use depth of flooding)

B10. Indicate the source of the Base Flood Elevation (BFE) data or base flood depth entered in B9.
☐ FIS Profile ☐ FIRM ☐ Community Determined ☐ Other (Describe):

B11. Indicate the elevation datum used for the BFE in B9: ☐ NGVD 1929 ☐ NAVD 1988 ☐ Other (Describe):

B12. Is the building located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA)? ☐ Yes ☐ No
Designation Date:

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

C1. Building elevations are based on: ☐ Construction Drawings* ☐ Building Under Construction* ☐ Finished Construction
*A new Elevation Certificate will be required when construction of the building is complete.
Building Diagram Number _____ (Select the building diagram most similar to the building for which this certificate is being completed - see pages 6 and 7. If no diagram accurately represents the building, provide a sketch or photograph.)

C3. Elevations – Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, AR/AO
Complete Items C3a-i below according to the building diagram specified in Item C2. State the datum used. If the datum is different from the datum used for the BFE in Section B, convert the datum to that used for the BFE. Show field measurements and datum conversion calculation. Use the space provided or the Comments area of Section D or Section G, as appropriate, to document the datum conversion.
Datum _____ Conversion/Comments _____
Elevation reference mark used _____ Does the elevation reference mark used appear on the FIRM? ☐ Yes ☐ No

- ☐ a) Top of bottom floor (including basement or enclosure) _____ . ___ ft.(m)
- ☐ b) Top of next higher floor _____ . ___ ft.(m)
- ☐ c) Bottom of lowest horizontal structural member (V zones only) _____ . ___ ft.(m)
- ☐ d) Attached garage (top of slab) _____ . ___ ft.(m)
- ☐ e) Lowest elevation of machinery and/or equipment servicing the building _____ . ___ ft.(m)
- ☐ f) Lowest adjacent grade (LAG) _____ . ___ ft.(m)
- ☐ g) Highest adjacent grade (HAG) _____ . ___ ft.(m)
- ☐ h) No. of permanent openings (flood vents) within 1 ft. above adjacent grade _____
- ☐ i) Total area of all permanent openings (flood vents) in C3h _____ sq. in. (sq. cm)

License Number, Embossed Seal, Signature, and Date

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

This certification is to be signed and sealed by a land surveyor, engineer, or architect authorized by law to certify elevation information.
I certify that the information in Sections A, B, and C on this certificate represents my best efforts to interpret the data available.
I understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001.

CERTIFIER'S NAME LICENSE NUMBER

TITLE COMPANY NAME

ADDRESS CITY STATE ZIP CODE

SIGNATURE DATE TELEPHONE

IMPORTANT: In these spaces, copy the corresponding information from Section A.

BUILDING STREET ADDRESS (Including Apt., Unit, Suite, and/or Bldg. No.) OR P.O. ROUTE AND BOX NO.

CITY STATE ZIP CODE

For Insurance Company Use:

Policy Number

Company NAIC Number

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION (CONTINUED)

py both sides of this Elevation Certificate for (1) community official, (2) insurance agent/company, and (3) building owner.

COMMENTS

☐ Check here if attachments

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO AND ZONE A (WITHOUT BFE)

For Zone AO and Zone A (without BFE), complete Items E1 through E4. *If the Elevation Certificate is intended for use as supporting information for a LOMA or LOMR-F, Section C must be completed.*

E1. Building Diagram Number _____ (Select the building diagram most similar to the building for which this certificate is being completed – see pages 6 and 7. If no diagram accurately represents the building, provide a sketch or photograph.)

E2. The top of the bottom floor (including basement or enclosure) of the building is ☐☐ ft.(m) ☐☐ in.(cm) ☐ above or ☐ below (check one) the highest adjacent grade.

E3. For Building Diagrams 6-8 with openings (see page 7), the next higher floor or elevated floor (elevation b) of the building is ☐☐ ft.(m) ☐☐ in.(cm) above the highest adjacent grade.

E4. For Zone AO only: If no flood depth number is available, is the top of the bottom floor elevated in accordance with the community's floodplain management ordinance? ☐ Yes ☐ No ☐ Unknown. The local official must certify this information in Section G.

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

The property owner or owner's authorized representative who completes Sections A, B, and E for Zone A (without a FEMA-issued or community-issued BFE) or Zone AO must sign here.

PROPERTY OWNER'S OR OWNER'S AUTHORIZED REPRESENTATIVE'S NAME

ADDRESS CITY STATE ZIP CODE

SIGNATURE DATE TELEPHONE

COMMENTS

☐ Check here if attachments

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

The local official who is authorized ~~by~~ law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. Complete the applicable item(s) and sign below.

G1. ☐ The information in Section C was taken from other documentation that has been signed and embossed by a licensed surveyor, engineer, or architect who is authorized by state or local law to certify elevation information. (Indicate the source and date of the elevation data in the Comments area below.)

G2. ☐ A community official completed Section E for a building located in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

G3. ☐ The following information (Items G4-G9) is provided for community floodplain management purposes.

G4. PERMIT NUMBER	G5. DATE PERMIT ISSUED	G6. DATE CERTIFICATE OF COMPLIANCE/OCCUPANCY ISSUED

G7. This permit has been issued for: ☐ New Construction ☐ Substantial Improvement

G8. Elevation of as-built lowest floor (including basement) of the building is: _____ . ☐☐ ft.(m) Datum: _____

G9. BFE or (in Zone AO) depth of flooding at the building site is: _____ . ☐☐ ft.(m) Datum: _____

LOCAL OFFICIAL'S NAME TITLE

COMMUNITY NAME TELEPHONE

SIGNATURE DATE

COMMENTS

☐ Check here if attachments

INSTRUCTIONS FOR COMPLETING THE ELEVATION CERTIFICATE

The Elevation Certificate is to be completed by a land surveyor, engineer, or architect who is authorized by law to certify elevation information when elevation information is required for Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO. Community officials who are authorized by law or ordinance to provide floodplain management information may also complete this form. For Zones AO and A (without BFE), a community official, a property owner, or an owner's representative may provide information on this certificate, unless the elevations are intended for use in supporting a LOMA or LOMR-F. Certified elevations must be included if the purpose of completing the Elevation Certificate is to obtain a LOMA or LOMR-F.

In Puerto Rico only, elevations for building information and flood hazard information may be entered in meters.

SECTION A - PROPERTY OWNER INFORMATION

This section identifies the building, its location, and its owner. Enter the name(s) of the building owner(s), the building's complete street address, and the lot and block number. If the building's address is different from the owner's address, enter the address of the building being certified. If the address is a rural route or a Post Office box number, enter the lot and block numbers, the tax parcel number, the legal description, or an abbreviated location description based on distance and direction from a fixed point of reference. For the purposes of this certificate, "building" means both a building and a manufactured (mobile) home.

A map may be attached to this certificate to show the location of the building on the property. A tax map, FIRM, or detailed community map is appropriate. If no map is available, provide a sketch of the property location, and the location of the building on the property. Include appropriate landmarks such as nearby roads, intersections, and bodies of water. For building use, indicate whether the building is residential, non-residential, an addition to an existing residential or non-residential building, an accessory building (e.g., garage), or other type of structure. Use the Comments area of Section F if needed.

If latitude and longitude data are available, enter them in degrees, minutes, and seconds, or in decimal degrees, taken at the center of the front of the building. Enter arc seconds to two decimal places. Indicate the horizontal datum and the source of measurement data (for example, taken with GPS, scaled from a USGS Quad Map, etc.).

SECTION B - FLOOD INSURANCE RATE MAP (FIRM) INFORMATION

Complete the Elevation Certificate on the basis of the FIRM in effect at the time of the certification.

The information for Section B is obtained by reviewing the FIRM panel that includes the building's location. Information about the current FIRM, and a pamphlet titled "Guide to Flood Maps," are available from the Federal Emergency Management Agency (FEMA) website at http://www.fema.gov or by calling 1-800-427-4661. If a Letter of Map Amendment (LOMA) or Letter of Map Revision (LOMR-F) has been issued by FEMA, please provide the letter date and case number in the Comments area.

Item B1. NFIP Community Name & Community Number. Enter the complete name of the community in which the building is located and the associated 6-digit community number. For a building that is in an area that has been annexed by one community but is shown on another community's FIRM, enter the community name and 6-digit number of the annexing community. For a newly incorporated community, use the name and 6-digit number of the new community. Under the NFIP, a "community" is any State or area or political subdivision thereof, or any Indian tribe or authorized native organization, that has authority to adopt and enforce floodplain management regulations for the areas within its jurisdiction. To determine the current community number, see the NFIP *Community Status Book*, available on FEMA's website at http://www.fema.gov or by calling 1-800-427-4661.

Item B2. County Name. Enter the name of the county or counties in which the community is located. For an unincorporated area of a county, enter "unincorporated area." For an independent city, enter "independent city."

B3. State. Enter the 2-letter state abbreviation (for example, VA, TX, CA).

Item B4. Map and Panel Number. Enter the 10-digit number shown on the FIRM panel where the building or manufactured (mobile) home is located. The first six digits will not match the NFIP community number: 1) when the sixth digit is a "C" in which case the FIRM panel is in a countywide format; or 2) when one community has annexed land from another comm··ity but the FIRM panel has not been updated to reflect this annexation. If the sixth digit is a "C," it is followed by a four-dig p mber. For maps not in countywide format, enter the "community panel number" shown on the FIRM.

Item B5. Suffix. Enter the suffix letter shown on the FIRM panel that includes the building's location.

Item B6. FIRM Index Date. Enter the effective date or map revised date shown on the FIRM Index.

Item B7. FIRM Panel Effective/Revised Date. Enter the map effective date or the map revised date shown on the FIRM panel. This will be the latest of all dates shown on the map. The current FIRM panel effective date can be determined by calling 1-800-427-4661.

Item B8. Flood Zone(s). Enter the flood zone, or flood zones, in which the building is located. All flood zones containing the letter "A" or "V" are considered Special Flood Hazard Areas. The flood zones are A, AE, A1-A30, V, VE, V1-V30, AH, AO, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO. Each flood zone is defined in the legend of the FIRM panel on which it appears.

Item B9. Base Flood Elevation(s). Using the appropriate Flood Insurance Study (FIS) Profile, Flood Elevation Table, or FIRM panel, locate the property and enter the BFE (or base flood depth) of the building site. If the building is located in more than one flood zone in Item B8, list all appropriate BFEs in Item B9. BFEs are shown on a FIRM or FIS Profile for Zones A1-A30, AE, AH, V1-V30, VE, AR, AR/A, AR/AE, AR/A1-A30, AR/AH, and AR/AO; flood depth numbers are shown for Zone AO. Use the AR BFE if the building is located in any of Zones AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO. In A or V zones where BFEs are not provided on the FIRM, the community may have established BFEs or obtained BFE data from other sources. For subdivisions and other developments of more than 50 lots or 5 acres, establishment of BFEs is required by the community's floodplain management ordinance. If the BFE is obtained from another source, enter the BFE in Item B9.

Item B10. Indicate the source of the BFE that you entered in Item B9.

Item B11. Indicate the elevation datum to which the elevations on the applicable FIRM are referenced.

Item B12. Indicate whether the building is located in a Coastal Barrier Resources System (CBRS) area or Otherwise Protected Area (OPA). Federal flood insurance is prohibited in designated CBRS areas for buildings or manufactured (mobile) homes built or substantially improved after the date of the CBRS designation. An information sheet explaining CBRS areas may be obtained on FEMA's website at http://www.fema.gov or by calling 1-800-427-4661.

SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)

Complete Section C if the building is located in any of Zones A1-A30, AE, AH, A (with BFE), VE, V1-V30, V (with BFE), AR, AR/A, AR/AE, AR/A1-A30, AR/AH, or AR/AO, or if this certificate is being used to support a LOMA or LOMR-F. If the building is located in Zone AO or Zone A (without BFE), complete Section E instead.

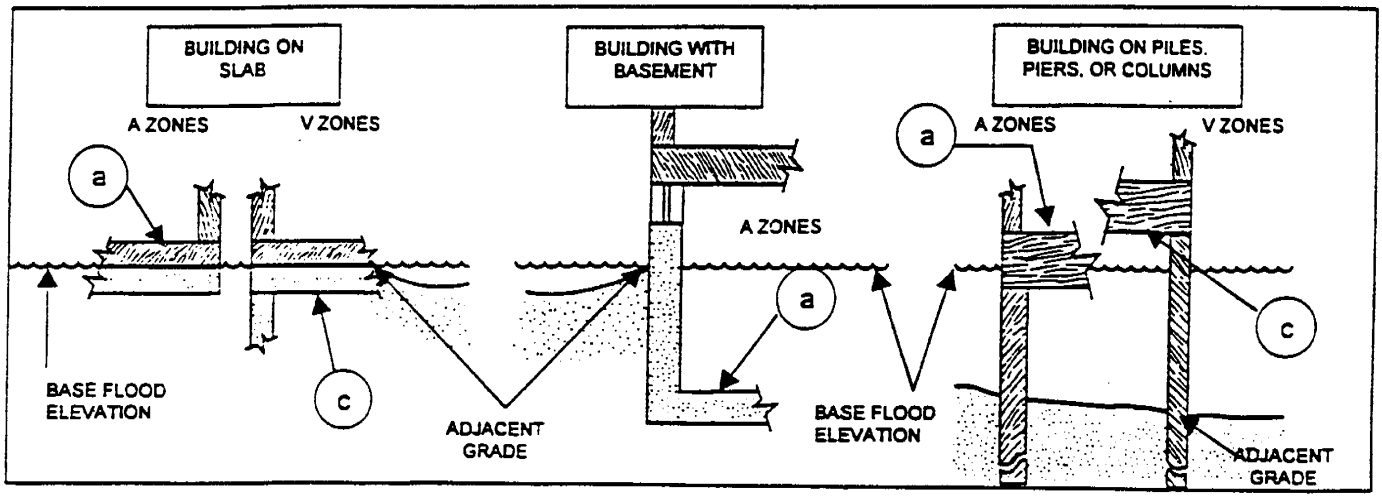
Item C1. Indicate whether the elevations to be entered in this section are based on construction drawings, a building under construction, or finished construction. For either of the first two choices, a post-construction Elevation Certificate will be required when construction is complete.

Item C2. Select the diagram on pages 6 and 7 that best represents the building. Then enter the diagram number and use the diagram to identify and determine the appropriate elevations requested in Items C3a-g. If you are unsure of the correct diagram, select the diagram that most closely resembles the building being certified, or provide a sketch or photograph of the building and enter all elevations in Items C3a-g.

Item C3. Indicate whether the elevation reference mark (benchmark) used during the field survey is an elevation mark on th[illegible]. If it is not, indicate the source and datum for the elevation. Vertical control benchmarks other than those shown on the [illegible] are acceptable for elevation determinations. Show the conversion from the field survey datum used to the datum used for the BFE(s) entered in Item B9. All elevations for the certificate must be referenced to the datum on which the BFE is

based. Show the datum conversion, if applicable, in this section or in the Comments area of Section D. For property experiencing ground subsidence, the most recently adjusted reference mark elevations must be used for determining building elevations. Enter elevations in Items C3a-g to the nearest tenth of a foot (in Puerto Rico, nearest tenth of a meter).

ms C3a-d. Enter the building elevations indicated by the selected building diagram (Item C2) in Items C3a-e. Elevation for of attached garage slab (d) is self-explanatory and is not illustrated in the diagrams. If the building is located in a V zone on the FIRM, complete Item C3c. If the flood zone cannot be determined, enter elevations for all of Items C3a-g. For buildings in A zones, elevations a, b, d, and e should be measured at the top of the floor. For buildings in V zones, elevation c must be measured at the bottom of the lowest horizontal structural member of the floor (see drawing below). *If any item does not apply to the building, enter "N/A" for not applicable.*



Item C3e. Enter the lowest elevation of machinery or equipment in an attached garage, enclosure, or open utility platform that provides utility services for the building. If the machinery or equipment is mounted to a wall, pile, etc., enter the platform ation of the machinery and/or equipment. *If this item does not apply to the building, enter "N/A" for not applicable.*

Items C3f-g. Adjacent grade is defined as the elevation of the ground, sidewalk, patio, or deck support immediately next to the building. Use the natural grade elevation, if available. This measurement must be to the nearest tenth of a foot if this certificate is being used to support a request for a LOMA or LOMR-F.

Items C3h-i. Enter the number of permanent openings (flood vents) in the walls supporting the building that are no higher than 1.0 foot above the adjacent grade. Determine the total area of all such openings in square inches (square cm, in Puerto Rico), and enter the total in Item C3i. If the building has no permanent openings (flood vents) within 1.0 foot above adjacent grade, enter "0" (zero) for each of Items C3h and C3i.

SECTION D - SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION

Complete as indicated. This section of the Elevation Certificate may be signed by only a land surveyor, engineer, or architect who is authorized by law to certify elevation information. Place embossed seal and signature in the box next to elevations in Section C. A flat stamp is acceptable only in states that do not authorize use of an embossed seal over the signature of a professional. You are certifying that the information in Sections A, B, and C on this certificate represents your best efforts to interpret the data available and that you understand that any false statement may be punishable by fine or imprisonment under 18 U.S. Code, Section 1001. Use the Comments area of Section D, on the back of the certificate, to provide datum, elevation, or other relevant information not specified on the front.

SECTION E - BUILDING ELEVATION INFORMATION (SURVEY NOT REQUIRED) FOR ZONE AO & ZONE A (WITHOUT BFE)

mplete Section E if the building is located in Zone AO or Zone A (without BFE). Otherwise, complete Section C inste

Item E1. Select the diagram on pages 6 and 7 that best represents the building; then enter the diagram number. If you are unsure of the correct diagram, select the diagram that most closely resembles the building, or provide a sketch or photograph.

Item E2. Enter the height in feet and inches (meters and centimeters, in Puerto Rico) of the top of the bottom floor (as indicated in the applicable diagram) above or below the highest adjacent grade (HAG). For post-FIRM buildings in Zone AO, the community's floodplain management ordinance requires that this value equal or exceed the base flood depth on the FIRM. Buildings in Zone A (without BFE) may qualify for a lower insurance rate if an engineered BFE is developed at the site.

Item E3. For Building Diagrams 6-8 with "proper openings" (see page 7), enter the height in feet and inches (meters and centimeters, in Puerto Rico) of the next higher floor or elevated floor (as indicated in the applicable diagram) above the highest adjacent grade (HAG).

Item E4. For those communities where this base flood depth is not available, the community will need to determine whether the top of the bottom floor is elevated in accordance with the community's floodplain management ordinance.

SECTION F - PROPERTY OWNER (OR OWNER'S REPRESENTATIVE) CERTIFICATION

Complete as indicated. This section is provided for certification of measurements taken by a property owner or property owner's representative when responding to Sections A, B, and E. The address entered in this section must be the actual mailing address of the property owner or property owner's representative who provided the information on the certificate.

SECTION G - COMMUNITY INFORMATION (OPTIONAL)

Complete as indicated. The community official who is authorized by law or ordinance to administer the community's floodplain management ordinance can complete Sections A, B, C (or E), and G of this Elevation Certificate. If the authorized community official completes Sections C, E, or G, complete the appropriate item(s) and sign this section.

Check **Item G1** if Section C is completed with elevation data from other documentation that has been signed and embossed by a licensed surveyor, engineer, ~~or~~ architect who is authorized by law to certify elevation information. Indicate the source of the elevation data and the date obtained in the Comments area of Section G. If you are both a community official and a licensed land surveyor, engineer, or architect authorized by law to certify elevation information, and you performed the actual survey for a building in Zones A1-A30, AE, AH, A (with BFE), V1-V30, V, AR, AR/A, AR/A1-A30, AR/AE, AR/AH, or AR/AO, you must also complete Section D.

Check **Item G2** if information is entered in Section E by the community for a building in Zone A (without a FEMA-issued or community-issued BFE) or Zone AO.

Check **Item G3** if the information in Items G4-G9 has been completed for community floodplain management purposes to document the as-built lowest floor elevation of the building. Section C of the Elevation Certificate records the elevation of various building components but does not determine the lowest floor of the building or whether the building, as constructed, complies with the community's floodplain management ordinance. This must be done by the community. Items G4-G9 provide a way to document these determinations.

Item G4. Permit Number. Enter the permit number or other identifier to key the Elevation Certificate to the permit issued for the building.

Item G5. Date Permit Issued. Enter the date the permit was issued for the building.

Item G6. Date Certificate of Compliance Issued. Enter the date that the Certificate of Compliance or Occupancy or similar written official documentation of as-built lowest floor elevation was issued by the community as evidence that all work authorized by the floodplain development permit has been completed in accordance with the community's floodplain management laws or ordinances.

Item G7. New Construction or Substantial Improvement. Check the applicable box. "Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a building, the cost of which equals or exceeds 50 percent of the market value of the building before the start of construction of the improvement. The term includes buildings that have incurred substantial damage, regardless of the actual repair work performed.

Item G8. As-built lowest floor elevation. Enter the elevation of the lowest floor (including basement) when the construction of the building is completed and a final inspection has been made to confirm that the building is built in accordance with the permit, the approved plans, and the community's floodplain management laws or ordinances. Indicate the elevation datum used.

Item G9. BFE. Using the appropriate FIRM panel, FIS, or other data source, locate the property and enter the BFE (or base flood depth) of the building site. Indicate the elevation datum used.

Enter your name, title, and telephone number, and the name of the community. Sign and enter the date in the appropriate blanks.

BUILDING DIAGRAMS

The following eight diagrams illustrate various types of buildings. Compare the features of the building being certified with the features shown in the diagrams and select the diagram most applicable. Enter the diagram number in Item C2 and the elevations in Items C3a-C3g.

In A zones, the floor elevation is taken at the top finished surface of the floor indicated; in V zones, the floor elevation is taken at the bottom of the lowest horizontal structural member (see drawing in instructions for Section C).

DIAGRAM 1

All slab-on-grade single- and multiple-floor buildings (other than split-level) and high-rise buildings, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor is at or above ground level (grade) on at least one side. *

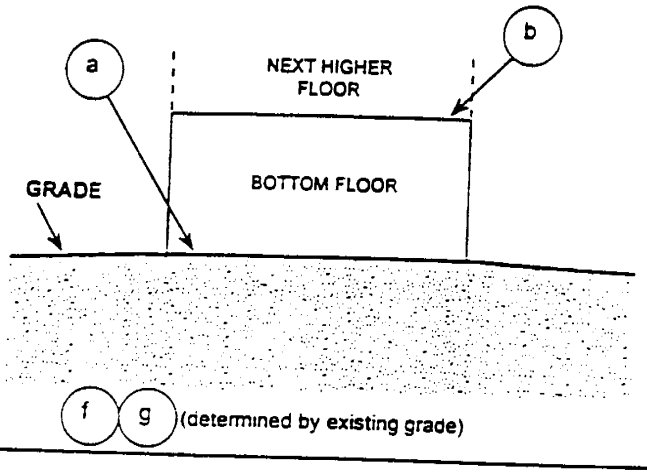


DIAGRAM 2

All single- and multiple-floor buildings with basement (other than split-level) and high-rise buildings with basement, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram.*

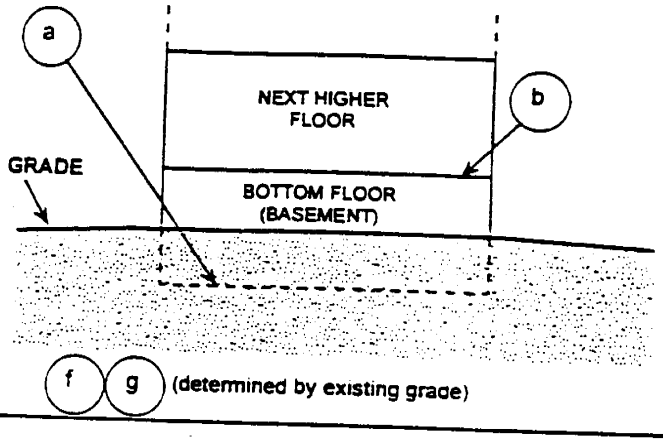


DIAGRAM 3

All split-level buildings that are slab-on-grade, either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (excluding garage) is at or above ground level (grade) on at least one side. *

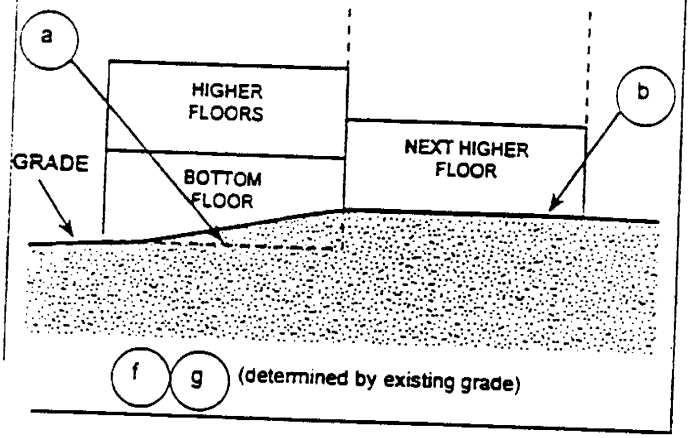
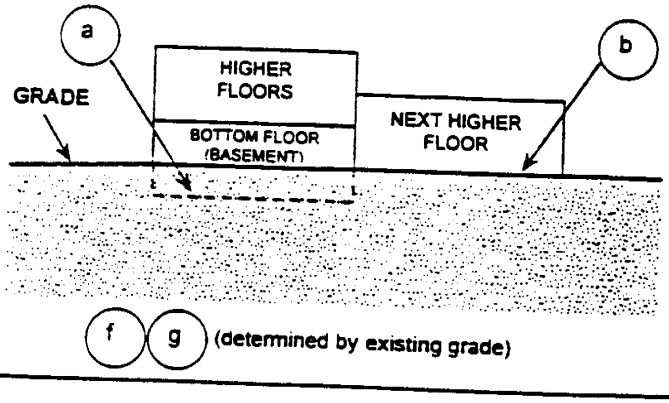


DIAGRAM 4

All split-level buildings (other than slab-on-grade), either detached or row type (e.g., townhouses); with or without attached garage.

Distinguishing Feature – The bottom floor (basement or underground garage) is below ground level (grade) on all sides. Buildings constructed above crawl spaces that are below grade on all sides should also use this diagram. *



* A floor that is below ground level (grade) on all sides is considered a basement even if the floor is used for living purposes, or as an office, garage, workshop, etc.

DIAGRAM 5

All buildings elevated on piers, posts, columns, or parallel shear walls. No obstructions below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is open, with no obstruction to flow of flood waters (open lattice work and/or readily removable insect screening is permissible).

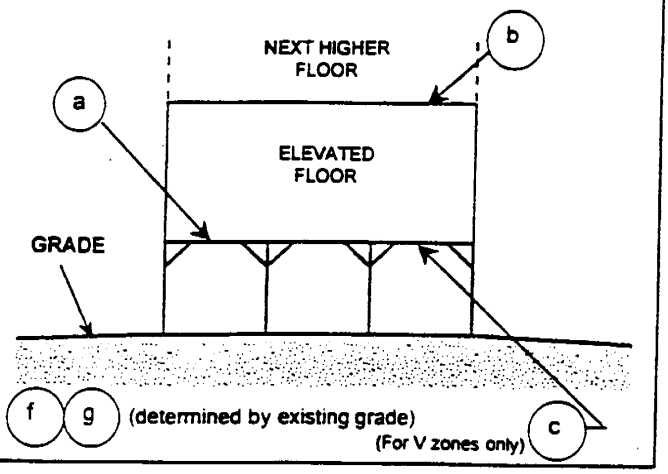


DIAGRAM 6

All buildings elevated on piers, posts, columns, or parallel shear walls with full or partial enclosure below the elevated floor.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about openings in Section C, Building Elevation Information (Survey Required).

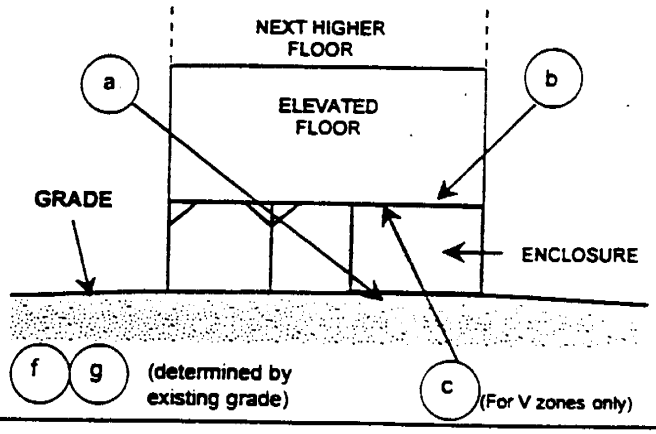


DIAGRAM 7

All buildings elevated on full-story foundation walls with a partially or fully enclosed area below the elevated floor. This includes walkout levels, where at least one side is at or above grade. The principal use of this building is located in the elevated floors of the building.

Distinguishing Feature – For all zones, the area below the elevated floor is enclosed, either partially or fully. In A Zones, the partially or fully enclosed area below the elevated floor is with or without openings** present in the walls of the enclosure. Indicate information about openings in Section C, Building Elevation Information (Survey Required).

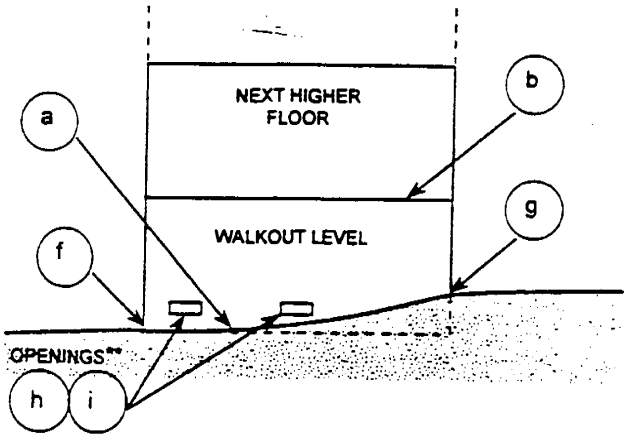
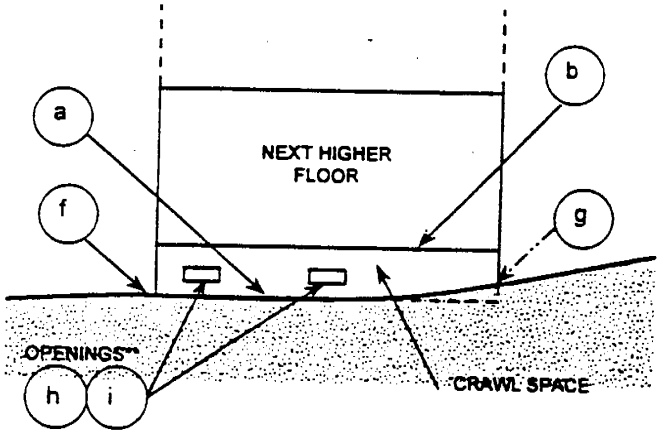


DIAGRAM 8

All buildings elevated on a crawl space with the floor of the crawl space at or above grade on at least one side.

Distinguishing Feature – For all zones, the area below the first floor is enclosed by solid or partial perimeter walls. In all A zones, the crawl space is with or without openings** present in the walls of the crawl space. Indicate information about the openings in Section C, Building Elevation Information (Survey Required).



** An "opening" (flood vent) is defined as a permanent opening in a wall that allows for the free passage of water automatically in both directions without human intervention. Under the NFIP, a minimum of two openings is required for enclosures or crawl spaces with a total net area of not less than one square inch for every square foot of area enclosed. Each opening must be on different sides of the enclosed area. If a building has more than one enclosed area, each area must have openings on exterior walls to allow floodwater to directly enter. The bottom of the openings must be no higher than one foot above the grade underneath the flood vents. Alternatively, you may submit a certification by a registered professional engineer or architect that the design will allow for the automatic equalization of hydrostatic flood forces on exterior walls. A window, a door, or a garage door is not considered an opening.